

Safety and Enforcement Division



Safety and Enforcement Division 2018 Annual Work Plan

Table of Contents

CPUC SAFETY VISION	3
SED CHARTER.....	3
ELIZAVETA MALASHENKO: DIRECTOR’S VISION	4
SED STRATEGIC INITIATIVES AND GENERAL OPERATIONS.....	6
STRATEGIC PLANNING.....	6
SED GENERAL OPERATIONS.....	6
OFFICE OF UTILITY SAFETY	7
LEE PALMER: DEPUTY DIRECTOR’S VISION	7
UTILITY RISK ASSESSMENT AND SAFETY ADVISORY.....	9
GAS SAFETY AND RELIABILITY BRANCH	14
ELECTRIC SAFETY AND RELIABILITY BRANCH.....	27
OFFICE OF RAIL SAFETY	40
ROGER CLUGSTON: DEPUTY DIRECTOR’S VISION	40
RAILROAD OPERATIONS AND SAFETY BRANCH	42
RAIL SAFETY RISK MANAGEMENT AND HIGH SPEED RAIL.....	48
RAIL TRANSIT SAFETY BRANCH	49
RAILROAD CROSSINGS AND ENGINEERING BRANCH.....	54

CPUC SAFETY VISION

The safety mission and goal¹ of the California Public Utilities Commission (CPUC) is to assure to the State of California that all of us will work every day to assure that the regulated utilities we depend on for critical services are as safe and resilient as they can possibly be. The CPUC will not only assure compliance with safety laws and regulations, but also challenge itself and the utilities to excellence. Ultimately we are striving to achieve a goal of zero accidents and injuries across all the utilities and businesses we regulate, and within our own workplace.

SED CHARTER

Safety and Enforcement Division Charter

Mission

The Safety and Enforcement Division protects the public and utility workers by ensuring that the regulated entities provide and maintain safe services.

We Are:

- Safety professionals
- Protectors of consumers and the public
- Technical experts in our fields
- Promoters of a safety culture
- A team that values each other
- Supportive coworkers who have each other's back
- Enforcement professionals
- Dedicated public servants
- Leaders by example
- Agents of change
- Tough, but fair
- Committed and resilient
- Skilled and innovative
- Open, honest and caring
- Teachers of best practices
- Promoters of workplace safety

Goals

- Excel at compliance and enforcement, but go beyond regulations to ensure safety
- Drive regulated entities to address and resolve safety issues in a timely manner
- Achieve excellence to the level that SED work experience is seen as a professional badge of honor by those inside and outside of the organization
- Be an organization that creates industry leaders
- Create a management culture focused on ethical action, personal accountability, and public service leadership
- Strive for and achieve excellence in everything that we do
- Promote a strong enforcement culture at the CPUC
- Be early adopters of best practices
- Raise public awareness, empowering Californians to own their own safety

Values

Accountability | Excellence | Integrity | Open Communication | Stewardship

¹ The full CPUC Safety Policy Statement can be found on the CPUC website <http://www.cpuc.ca.gov/general.aspx?id=7772>

ELIZAVETA MALASHENKO: DIRECTOR'S VISION

Safety and Enforcement Division (SED) continues to grow and expand in capabilities and effectiveness. In every industry that SED oversees, we provide cutting edge impact that is studied around the globe. SED experts are providing leadership and technical expertise in national forums such as the National Association of Pipeline Safety Representatives, Common Ground Alliance, Transmission Maintenance Coordination Committee, National Committee on Uniform Traffic Control Devices, Transit Advisory Committee for Safety, and Rail Safety Advisory Committee, just to name a few. The ways in which SED conducts major investigations, such as the natural gas leak at Southern California Gas Company's Aliso Canyon Natural Gas Storage Facility, is being studied and analyzed by experts all over the world. Proactive steps that SED staff takes to address industry risks, such as shipment of crude oil, set an industry gold standard. SED makes a difference in the lives of Californians, in the industries that we regulate, and the agency we serve.

SED is an important first line of defense in the face of major infrastructure challenges. The 2017 California wildfire season was the most destructive on record, with more than 9,000 fires burning more than 1.2 million acres and five of the 20 most destructive wildland-urban interface fires in the state's history. These large-scale disasters span numerous jurisdictions, making essential close partnerships such as those with Governor's Office of Emergency Services (CalOES) and California Department of Forestry and Fire Protection (CAL FIRE), which have greatly enhanced abilities of the agencies to tackle major issues from natural gas leaks to wildfires. This year, SED is initiating a formal agreement with the California Underground Facilities Safe Excavation Board to improve excavation safety.

In the rail infrastructure arena, injuries and fatalities remain stubbornly on the rise. Between 2015 and 2016, the number of nation-wide rail-related fatalities increased by 19.2 percent and last year California experienced more than 170 fatalities as a result of rail related accidents. Unless we slow this trend, it is projected that California will experience more than 200 rail-related deaths annually by 2020. Although many factors beyond the control of SED drive these trends - including ageing infrastructure, climate change, and increase in population density, and distraction of drivers and pedestrians due to proliferation of mobile devices, SED staff are in critical positions to identify solutions, propel discussions, and work with others to create change. This year, as one example, the rail team will test promising evidence that pavement markings can reduce incidents, fatalities, and injuries.

SED staff has the technical knowledge and first-hand experience of infrastructure in the field. The core of SED's work is compliance and enforcement, but our impact goes far beyond that. The challenges facing the State require SED to not only assure that infrastructure is safe and code compliant today, but to also think about tomorrow and how we can better assure safety in the future. For example, SED is currently building a brand new utility cyber security program. Everyone in SED makes a difference and has an opportunity to make a lasting impact.

*The one question that everyone in SED is tasked with posing is, “**How Can We Do This Better?**” Whether it’s an internal SED process, a regulation, or a practice at a utility, there are opportunities for improvement. It’s not possible for the CPUC to act on every idea, but the mindset and the dialogue will drive us and others forward.*

My goal for 2018 is to create more opportunities for SED to engage on policy matters and to establish structures that further empower SED staff so that our impact will continue to develop and expand.

I look forward to another year of working to create a safer, more resilient infrastructure. It’s an honor to work with the dedicated and passionate SED team.

- Elizaveta Malashenko, Director, SED

SED STRATEGIC INITIATIVES AND GENERAL OPERATIONS

STRATEGIC PLANNING

In 2016, the CPUC went through a strategic planning effort, through which the CPUC adopted 15 Strategic Directives, 8 Governance Processes and 5 Commissioner-Staff Linkage Policies. The CPUC strategic plan can be found here:

<http://docs.cpuc.ca.gov/publisheddocs/published/g000/m164/k197/164197263.pdf>

STRATEGIC DIRECTIVE 2 - SAFETY

In 2017, CPUC went through the first round of performance review pertaining to Strategic Directives adopted by the Commission. That exercise produced several lessons learned and may result to revisions to the Strategic Directives and annual performance review methodology.

SED will work with Commissioners on any desired revisions to the Safety Strategic Directive and on developing metrics that track the impact of CPUC safety policies and actions on safety performance of regulated entities.

ACCOUNTABILITY AND REPORTING

SED's goal is to keep internal and external stakeholders updated on work planned, work accomplished and key developments. The reports include:

- The annual plan
- Monthly progress reports to the Executive Director
- P.U. Code Section 911 (Safety: Gas/Electric) - annual summary of investigations
- P.U. Code Sections 765 & 911.1 - NTSB recommendations and CPUC actions
- P.U. Code Section 916 (Safety: Rail): General Rail Safety Report. This report includes info from sections 916.1, 916.2, 916.3, 916.4

SED also produces a monthly report that tracks all major activities and progress. The reports are public and can be found on the CPUC website: http://www.cpuc.ca.gov/sed_monthly_reports/

SED GENERAL OPERATIONS

SED has an Administrative Unit that supports Division's multiple operations and administrative requirements and functions, including:

- Hiring
- Budget management
- Purchasing
- Contracts
- Timekeeping
- Fleet management

In 2017, SED Administrative Unit went through a re-organization and process update. In 2018, the Administrative Unit is going to continue implementing changes to better serve the Division.

OFFICE OF UTILITY SAFETY

The mission of the Office of Utility Safety (OUS) is to provide leadership in the energy and utilities industry and to develop, implement and enforce best in class safety programs within the regulated entities.

LEE PALMER: DEPUTY DIRECTOR'S VISION

During 2017 the OUS continued to realign itself to enhance working relationships with offices both internal and external to the CPUC, with the continued end goal of improving both the efficiency and capacity of the OUS organization. Enhancements included entering a Memorandum of Understanding (MOU) with CAL FIRE, formalizing the wildfire working group with CAL FIRE, incorporating a Wildfire Mitigation Section within the Electric Safety and Reliability Branch, and focusing on filling position vacancies. Efforts provided a steadfast and fertile working relationship for both the OUS and those organizations it supports.

The 2018 OUS priorities emphasize increasing our capacity, effectiveness, and timeliness:

- *Fill Vacancies and retain qualified staff through aggressive marketing and emphasizing a work-life balance;*
- *Continue to develop and codify the relationship between the OUS, the CalOES and the California Department of Forestry and Fire Protection (CAL FIRE);*
- *Continue to identify and train on responsibilities in Emergency Management;*
- *Develop the OUS Wildfire Mitigation Section (ESRB-SB1028);*
- *Introduce the Utility Cyber Security Branch (UCSB);*
- *Developed processes to streamline administrative functions across all branches of the OUS;*
- *Continue to support regionalization by having the right staff in the right place;*

Here are some short references regarding broad goals for OUS in 2018. More specific goals and tasks are detailed in the individual branch work plans that follow.

The Primary goal for the OUS in 2018 remains filling critical position vacancies. In the past 12 months there has been a net gain of 16 new hires across the four programs that fall under the OUS. Previously the capacity of all four OUS branches to conduct critical regulatory and administrative functions was diminished due to a loss of institutional knowledge. Since the beginning of 2017, the OUS has gained three additional direct report units; the SED Administrative and Budget Unit, the Wildfire Mitigation Section, and the Utility Cyber Security Program. Each arrived with their own hiring needs and vacancies. The current vacancy rate of the OUS is 27%. It is imperative we continue to invest in identifying qualified candidates to fill mission essential staffing needs. The way ahead in 2018 continues to focus on the following proven efforts:

- *Onboarding Program: close coordination and investment with the CPUC Human Resources and designated consultants to develop and identify qualified candidates.*

- *Mentorship and Retention Program: in 2018 we will continue to endorse mentors for all new hires, regardless of position. The goal being both a method for knowledge transfer and to promote from within, maintaining continuity.*
- *Encourage a “work-life” balance: managers and supervisors work with staff to develop work schedules that provide the staff member with the flexibility to decompress while not hindering SED priorities and obligations to the citizens of California.*
- *Maintain a mentorship program that assigns seasoned inspectors with new hires in order to provide an on-call resource for new staff.*

My second goal in 2018 is to continue to develop and codify the relationship between the OUS, CalOES and CAL FIRE; in 2017 the CPUC and SED entered into MOUs with both CalOES and CAL FIRE. Those relationships, though formalized through MOUs, are in their early stages. The OUS, SED, and the CPUC must continue to build upon those working relationships by dedicating both staff and time into building functional relationships. These functional relationships include the following:

- *Identify milestones and points of contact for each program, GSRB, ESRB, and UCSB respectively that provide resource management and increase the capacity of current capabilities.*
- *Continue scheduled and functional working groups with both CalOES and CAL FIRE respectively that work to complement and enhance current OUS responsibilities and scope of work.*
- *Identify and exploit overlapping lines of effort with CalOES and CAL FIRE to increase training opportunities, emergency management expertise, and improve investigation skill sets. The end state being; increase investigatory capacity and timeliness.*

My third goal in 2018 is to stand-up, and develop, new programs within the OUS; the Wildfire Mitigation Program and the Utility Cyber Security program. Beyond current programs and regulations, the OUS continuously looks outward to improve and grow a safety culture throughout the utility community.

- *In accordance with SB 1028, OUS hired three additional Utility Engineers dedicated to developing the SB 1028 program. 2018 program goals as follows: (1) confer with CAL FIRE to determine appropriate submittal dates and compliance periods for the utilities’ wildfire mitigation plans, (2) establish initial expectations for the substance and extent of the plan’s contents, (3) obtain training and education to cultivate internal wildfire expertise, and (4) develop procedures and deadlines for utility filings and for CPUC review and comment on the wildfire mitigation plans.*
- *In 2017 the OUS expanded to include the Utility Cyber Security Branch. Currently in the hiring phase, much of 2017 was spent identifying the duty descriptions behind who will comprise the new branch. Hiring is expected to be complete by the end of the third quarter 2018. Immediate UCSB goals as follows: (1) confer with CalOES and other appropriate state and federal agencies to socialize and build the program, and (2) incorporate regulated utility organizations to foster a dedicated and clearly identified trust network between the regulated utilities and the CPUC.*

The Office of Utility Safety will continue to build upon its successes and position itself to manage anticipated increasing responsibilities associated with California's population, environment, and infrastructure needs.

- **Lee Palmer, Deputy Director, Office of Utility Safety, SED**

UTILITY RISK ASSESSMENT AND SAFETY ADVISORY

The mission of the Risk Assessment and Safety Advisory (RASA) section is to promote safety by ensuring that the regulated entities integrate risk analysis and risk management practices into their current operations, future planning and decision-making processes.

The section's professional engineers and analysts apply technical and regulatory policy expertise to a wide variety of Commission proceedings and initiatives in order to:

- Identify, analyze, and mitigate present and potential risks in the natural gas & electric systems;
- Promote risk-informed decision-making in Commission proceedings, particularly General Rate Cases;
- Suggest improvements in audits and inspections performed by SED;
- Coordinate with other Commission divisions, State and/or Federal agencies to promote safety in regulated utility operations and research expenditures;
- Identify and promote new approaches to Risk Assessment and energy policy development through whitepapers, reports and presentations at industry conferences.

The Risk Assessment section is specifically tasked with monitoring proceedings and rate case testimony to ensure that relevant Safety concerns are adequately considered:

- Identify safety concerns and issues that should be considered in new applications, rulemakings or investigations and provide recommendations to Commission decision-makers;
- Refer to appropriate agencies with overlapping or parallel jurisdiction any Safety concerns that arise in proceedings;
- Monitor compliance with Commission decisions and Ordering Paragraphs that provide specific directions to SED.

ACCOMPLISHMENTS IN 2017; GOALS FOR 2018

During the past year, the Risk Assessment & Safety Advisory section was able to meet several critical milestones, including finalization of staff evaluation reports for Southern California Edison's General Rate Case and the Sempra Utilities' Risk Assessment Mitigation Phase (RAMP) proceeding, along with completion of a consultant's report in the Pacific Gas & Electric Safety Culture investigation, and staff reports on Physical Security of Electric Infrastructure and a Joint Report with CARB staff for the 2016 Natural Gas Leak Survey.

RASA staff has earned a reputation for high quality, timely work products, participatory workshops and technical group facilitation that all contribute to Commission decision making for some of the CPUC's highest profile, complex proceedings.

For 2018, RASA's priority will be to help bring several ongoing proceedings to a successful conclusion, so that the safety-related policies being developed can be fully implemented and incorporated into utility practices.

Among expected milestones for the year, RASA staff will oversee compliance plans to ensure that the state's gas system minimizes its contributions to greenhouse gas emissions to meet California's stringent GHG reduction goals. Work continues on refining the Commission's approach to preventing and mitigating wildfires that have proved so devastating to the state during 2017.

KNOWLEDGE SHARING

During 2017 RASA staff created several opportunities to share its work and knowledge by making presentations for CPUC staff and, when the opportunities met Commission criteria, through presentations and participation in energy industry events, conferences and seminars.

RASA staff promoted safety through Friday Forum presentations about current activities, "pop-up learning" sessions, and holding "bridging" meetings with government agency staff involved with physical and cyber security matters, among other issues.

RASA's promotion of Energy Storage safety standards at a Department of Energy-sponsored forum in February, and a presentation on California's newly adopted Methane Leak Abatement program at a December Gas Technology Institute conference successfully demonstrate CPUC leadership on a national basis.

RASA remains committed to working cooperatively with the newly established Office of Safety Advocates to avoid overlap in responsibilities and to maximize Commission efforts to ensure that safety is adequately addressed in proceedings and decisions that impact utility operations and budgeting.

MAJOR PROCEEDINGS

Safety Model Assessment Proceeding (A.15-05-002, et al) After nearly a full year in which utilities and intervenors refined proposed methodologies for identifying, ranking and developing mitigations for top operational and safety risks, this S-MAP proceeding is targeted for completion during 2018. In 2018, staff will be evaluating the utilities' risk assessment models for future use in RAMP and GRC cases, while finalizing policies for accountability reporting, safety performance metrics, and applying risk-informed ratemaking to smaller energy utilities.

Gas Leak Abatement OIR (R.15-01-008) In March 2018, respondent utilities will be filing their first mandatory compliance plans to incorporate the 26 Best Practices for methane leak detection, quantification and elimination, as ordered in D.17-06-015. RASA staff will review and approve compliance plans and proposed pilots/R&D projects meant to contribute to the state's ambitious GHG reduction target. Work continues on refining the annual report templates to meet changing informational needs, and working with the California Air Resources Board to revise emission factors to improve the utilities' reporting of emissions.

Investigation into Safety Culture of Pacific Gas and Electric Company and PG&E Corp. (I.15-08-019) With the completion of NorthStar's report and recommendations, the investigation is expected to enter into hearings in 2018. Testimony from PG&E and parties is expected to help define the potential actions that the Commission may consider, with possible evidentiary hearings.

Physical Security of the Electric Supply System (R.15-06-009) With the publication of a staff whitepaper providing an updated platform of information about the current state of utility physical security, the next step will be consideration of a Joint Utility Proposal for developing compliance and mitigation plans, and for sharing sensitive information with the Commission. RASA staff has provided an evaluation and additional recommendations for the Joint Proposal, which will help form the record for a decision in this proceeding in 2nd Quarter 2018. A second phase of the rulemaking, with a focus on emergency planning among energy, water and telecommunications companies with local jurisdictions, will commence in March. RASA will continue to support the proceeding and has planned workshops to raise relevant issues.

Rulemaking to Develop and Adopt Fire-Threat Maps and Fire-Safety Regulations (R.15-05-006) The adoption of new and revised regulations for high-fire zone areas in December 2017 (D. 17-12-024) and the adoption of the new Fire Map 2 together established a new regulatory structure for preventing utility-involved wildfires. SED will continue working with Cal FIRE and utilities to further refine maps and assess new policy directions.

Vehicle Electrification (A.17-01-020/-021/-022) The Commission has approved a SED-proposed structure for Safety Plans for new electric vehicle "priority plans", and may extend work on safety to technical working groups.

OTHER PROCEEDINGS

General Rates Cases During 2018 Throughout the year, RASA has worked closely with utilities and intervenors to develop the framework and substance for new aspects of the Rate Case Plan that are being developed in the S-MAP proceeding (see above) to incorporate a risk-informed approach to General Rate Cases. Each GRC exhibits a deeper and more refined set of expectations for utilities to show how they are identifying, prioritizing and addressing safety and operational risks. This effort is unique in utility regulation nationally, and the RASA provides expert analysis and assistance to bring about successful collaboration to resolve what could be highly contentious issues and proceedings.

PG&E 2017 General Rate Case (A.15-09-001) The May decision (D. 17-05-013) to mostly adopt the GRC settlement indicated the strength of the new RAMP process for identifying safety risks, as most of PG&E's proposed mitigations were accepted. In 2018, SED RASA and Energy Division will focus on PG&E's compliance with safety spending accountability reporting and safety metrics reporting.

- **SCE 2018 General Rate Case (A.16-09-001)** When a Proposed decision is ready for review, SED RASA will review aspects related to program spending for those operations associated with electric safety, and will recommend accountability reporting provisions.
- **SDG&E/SoCal Gas Risk Mitigation Assessment Phase (RAMP) (I.16-10-015/016) and SDG&E/SoCal Gas GRC (A.17-10-07/008)** This first-of-its-kind proceeding established the utilities' proposed safety risk and mitigation portfolio for the 2019 GRC filed in October 2017. RASA is reviewing the GRC application to see how the utilities have integrated the RAMP evaluation and comments, and will provide a review of safety/reliability incidents per SB 900.
- **PG&E RAMP (I.17-11-003):** SED RASA will review PG&E's risk and safety mitigation proposals made as part of the RAMP, with an evaluation report due March 30 and a public workshop on April 17. This evaluation will inform PG&E's next GRC, scheduled to be filed in September 2018.
- **PG&E's Gas Transmission & Storage (A.17-11-009):** In parallel with the PG&E RAMP evaluation, SED RASA will review those safety risks and mitigation plans that are proposed for funding through the GT&S case. Staff is also looking into prospective Safety issues that could arise from the utility's proposal to close or dispose of two natural gas storage facilities.

OTHER COMPLIANCE ACTIVITIES

Whistle Blower and Safety Flag The RASA staff administers and monitors the CPUC's whistleblower web site, ensuring that confidential complaints about utility practices are routed to the proper entities within the CPUC. The Commission also has a Safety Flag system for agency employees to report safety concerns and possible violations, and RASA works with the CPUC's Safety Ombudsman to manage that system.

PG&E GT&S Pipeline Audit D.16-06-056 in the PG&E GT&S disallowed from immediate recovery \$696.4 million for 2011-2014 capital expenses above that previously approved in Gas Accord V. \$120 million is permanently disallowed, but \$576 million would be subject to an audit by Commission staff or a third party. Three components of the audit:

- To assess whether relevant projects are PSEP-related or GT&S related;

- The extent to which costs may have been inflated due to issues including acceleration of PG&E's system remediation work;
- The extent to which the work is necessary because PG&E either had not performed it correctly in the past or that it was previously funded but never conducted.

RASA staff and Energy Division are working together to review PG&E's documentation for 104 pipeline projects that are subject to the audit. At this point, Risk staff expects the audit will be done by CPUC staff to ensure completion during 2018, and the audit report will become part of the record of the case for PG&E's expected application for rate recovery of reasonable costs, based on the audit findings.

Monthly Safety Metrics RASA is also responsible for compiling the monthly SED report on metrics and activities. This includes updates to the Compliance with Ordering Paragraphs (COPs) initiative for the safety & Enforcement Division, and monitoring progress on SED's Strategic Initiatives.

LEGISLATIVE LIAISON

All Staff and sections of SED expect that part of their job is to respond to inquiries from the Legislature and support the Office of Governmental Affairs (OGA) in producing timely analysis of pending bills and background for issues that may be considered in legislation. RASA staff has served as SED's legislative liaison, and will continue this critical support for the current legislative session as required.

INTRA- AND INTER-AGENCY COOPERATION

In the course of its activities to support many of the above proceedings, the RASA works closely and cooperatively with other SED branches (GSRB, ESRB), and with other Commission entities (Energy Division, ORA, Policy and Planning, and the newly created Office of Safety Advocates). RASA also works with Staff at the California Air Resources Board and the California Energy Commission, among other agencies. This is expected to continue in 2018 and beyond.

TECHNICAL REPORTS AND RISK IDENTIFICATION

When it was created in 2011, the Risk Assessment section had a primary task of identifying potential risks to natural gas operations, conducting original research into those issues and producing whitepapers or technical reports to provide recommendations for further action by policy makers. With the more recent emphasis on providing safety advisory support for proceedings and rate cases, these reports have tended to be geared toward advancing specific aspects of the rulemakings or investigations.

During 2018, Staff will work with the SED Director and Deputy Director develop a new work plan for researching safety and risk related topics outside of the context of current proceedings, to identify new areas for Commission consideration and new approaches to resolving difficult aspects of risk analysis.

New Approaches to Wildfire Mitigation The devastating wildfire sieges of late 2017 have shown the limitations of traditional approaches to reducing the risks associated with utility-involved fires. Even as investigations into the causation of these fires continues, RASA staff, working with others throughout the Commission, are exploring ideas that may forge a new path for preventing utility ignitions that can lead to serious fires. A Commission En Banc in early 2018 set the stage for explorations into such practices as pro-active de-energization of power lines during high risk periods, balancing reliability concerns versus safety in the use of automatic reclosers technologies, the costs and benefits of undergrounding overhead circuits in high-fire zones and the analysis of new technological solutions.

Comparative Analysis of the National Electrical Safety Code and CPUC General Order 95 – California is the only state to base its Safety regulation of electric facilities on a set of General Orders, rather than defer to the National Electrical Safety Code (NESC). RASA staff has conducted a fundamental assessment of key differences between these two sets of standards, with a particular focus on electric poles and wires and vegetation management practices. In 2018, the effort will explore possible alternate approaches to regulation that could capture the best of each model.

A New Paradigm for Electric Generation Safety Regulations

With a new distributed generation framework evolving throughout the electric industry, RASA will continue to explore policies for safe interconnection and operation of electric distributed energy resources, which include small-scale generation, energy storage, interconnected devices, and sensors/monitoring/controls. Initial work has resulted in a set of Safety Inspection Guidelines for Energy Storage facilities located at utility substations and power plants. Staff will continue to assess potential Safety policy refinements in the context of ongoing rulemakings for Distributed Energy Resource Planning and other relevant forums.

ALARP 2

Risk staff previously explored the risk-management concept of “As Low as Reasonably Practicable” (ALARP) in the S-MAP proceeding. Further development of ALARP could include how ALARP can inform regulatory decisions, addressing such issues as defining risk tolerance, and applying the ALARP concept to help decide between reducing pipeline methane emissions and traditional risk reduction for safety.

GAS SAFETY AND RELIABILITY BRANCH

The mission of the Gas Safety and Reliability Branch (GSRB) is to enforce Federal and State natural gas and liquefied petroleum gas regulations by ensuring that California intrastate gas pipeline systems are designed, constructed, operated, and maintained according to applicable safety regulations. GSRB compliments its enforcement role by promoting a culture that inspires and institutes the values of natural gas safety best practices by providing leadership and technical expertise in a variety of forums such as the National Association of

Pipeline Safety Representatives (NAPSR) technical committees and various other gas safety forums.

PHMSA – STATE PIPELINE SAFETY PROGRAM RELATED ACTIVITIES

The California legislature, through its agreement with the Department of Transportation's Office (DOT) of Pipeline Safety has empowered the CPUC to enforce minimum federal pipeline standards in addition to CPUC's General Orders and CA Public Utilities Code for operators of intrastate natural gas and liquefied petroleum gas systems. The CPUC is certified under 60105 and 60106 of the Federal Pipeline Safety Statutes (49 U.S.C. § 60101 et Seq.)². The safety standards apply to the design, construction, operations, and maintenance of pipeline facilities. GSRB performs its work under the oversight from the DOT's Pipeline and Hazardous Materials Safety Administration (PHMSA).

The CPUC follows the DOT Grant-in-Aid Program and must adhere to strict application and submission procedures, and exercise good grant management practices to receive the benefits of the federal grant. The scope of the grant is to support up to 80% of the cost of personnel, equipment and activities reasonably required to carry out inspection and enforcement activities of intrastate pipeline facilities as necessary per the applicable chapters of Title 49 of the Code of Federal Regulations. Grant support is provided to SED by the CPUC's Administrative Services Division. Below are some additional requirements of the CPUC certification:

- Response to Program Evaluation (due within 60 days of receiving PHMSA's audit)
- Progress Report (due February 28, 2018)
- Year-end Payment (due March 7, 2018)
- Gas Safety Program Evaluation by PHMSA, October 22-26, 2018
- 3 weeks of PHMSA Field Evaluation (April, June, July 2018)
- Annual update letter to the National Transportation Safety Board (NTSB) on recommendations by January of each year (completed for 2018)
- Base Grant Application due September 2018
- Attendance at NAPSR Regional meeting, Seattle, WA April 2018
- Attendance at annual NAPSR National meeting, Santa Fe, NM October 15, 2018
- Ensure each inspector has met their inspection person day requirement using the new PHMSA staffing formula (approximately 110 days / year or 50% of their work time)

PHMSA Annual Evaluation

Each year, the Gas Safety Program is audited by the PHMSA. The program continued to experience improvement in its 2017 annual evaluation for calendar year 2016 activities. GSRB continuously incorporates feedback from PHMSA and refine Gas Safety Processes and Procedures. There are both follow-up activities from the previous audit CY-2016 and preparation for the next audit CY-2017 which is expected in the 3rd Quarter of 2018. The table below details the areas for continuous improvement in program performance:

² CPUC entered into a 49 USC §60106 agreement with PHMSA for Calendar Year 2018.

PHMSA Feedback from Evaluation & Internal Efforts	
PHMSA Finding	Status
In our 2017 evaluation, PHMSA found the need for additional improvement in accordance with time intervals established in GSRB's written procedures	In 2018, CPUC has implemented PHMSA Inspector Assistant (IA) for all inspections and will conduct comprehensive gas safety inspections on schedule
GSRB did not use the current version of certain inspection forms	In 2018, CPUC has implemented PHMSA IA which will automatically use the current protocol form for inspections
It was found that GSRB needed improvement in its written procedures for conducting On-site operator training	GSRB has since updated its procedures to better explain its role for conducting on-site operating training. The CPUC's Gas Safety group will continue to participate in a Gas Safety pipeline seminar as required by the State Guidelines and conduct on-site operator training whenever requested by an operator. In addition, the CPUC with PHMSA's T&Q plans to host and record a master meter training session in 2018 or 2019 and post this on the CPUC's website

PHMSA expressed concern on the new required minimum inspection person day requirement	GSRB conducted the required level of inspection person days in 2017 and has set an internal inspection person day requirement of 50% of available work time per inspector to meet the new PHMSA State Inspection Calculation Tool
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GSRB Staff Certification and PHMSA Training

GSRB staff are trained and certified in Oklahoma City, OK by PHMSA. Core courses must be completed within 36 months from completion of the first training course. There are additional courses for integrity management certifications, Liquefied Natural Gas inspections, Operator Qualification, Control Room Management, Drug & Alcohol testing, and SCADA. The core training is included in the table below:

Table 1 – PHMSA Core	
Mandatory Course Codes	Mandatory Courses - Title
PHMSA-PL1250	Safety Evaluation of Gas Pipeline Systems
PHMSA-PL1255	Gas Pressure Regulation & Overpressure Protection
PHMSA-PL1310	Plastic and Composite Materials
PHMSA-PL3242	Welding and Welding Inspection of Pipeline Materials
PHMSA-PL3256	Failure Investigation Pipeline Failure Investigation Techniques
PHMSA-PL3293	Corrosion Control of Pipeline Systems
PHMSA-PL3257	Pipeline Safety Regulation Application and Compliance Procedures

NATIONAL ASSOCIATION OF PIPELINE SAFETY REPRESENTATIVES

GSRB staff participates in several National Association of Pipeline Safety Representatives (NAPSR) technical committees. Technical committees are vitally important for keeping current with changes in the industry and sharing best practices. GSRB management will look for additional technical groups as opportunities present themselves. The following GSRB staff participates in these technical groups:

- Sunil Shori serves on the NAPSR Plastic Pipe Data Committee (PPDC) as well as serving on the Common Ground Alliance Committee (CGA)
- Paul Penny serves on the PHMSA Integrity Management Work Group

INSPECTIONS (AUDITS)

GSRB plans to conduct 51 inspections of the major gas utilities in 2018, including Integrity Management and Operator Qualification inspections. GSRB plans to use PHMSA's Inspection Assistant (IA) for all of our 2018 inspections. The use of IA in 2018 is expected to yield numerous improvements including a more uniform, efficient and organized system. The timeline expectation for completion of Inspection Reports is 60 days. Staff and Supervisors will be monitored closely on this timeline expectation in 2018.

Start Dates	Inspection	Area
1/8	SEMPRA Operation and Maintenance programs updates only	SCG and SDG&E
1/22	PG&E (Operation and Maintenance Plans)	PG&E
1/29	SCG Transmission: South Desert	Blythe, Beaumont
2/5		
2/5	PG&E East Bay Division (Comprehensive Standard Distribution)	Oakland, Richmond
2/12	PG&E East Bay Division (Comprehensive Standard Distribution)	Oakland, Richmond
2/26	SCG Transmission: San Joaquin Valley	Valencia, Taft
3/5		
2/26	PG&E Mission Division (Comprehensive Standard Distribution)	Hayward
3/5	PG&E Mission Division (Comprehensive Standard Distribution)	Hayward
3/19	PG&E (Transmission Integrity Management Program - Protocols D & G)	PG&E
3/19	PSEP: Material Traceability Audit	PG&E
3/26	Alpine (Comprehensive Standard Distribution, Operation and Maintenance, and Emergency Plans, & Distribution Integrity Management Program)	Valley Springs
4/2	SCG Distribution: SE - Desert Valley	El Centro, Palm Desert, Yucca Valley, Blythe
4/9		
4/2	PG&E Central Area (Comprehensive Standard Transmission Backbone - Tracy District & Rio Vista District / Station - Bethany / Local Transmission - Stockton Division & Yosemite Division)	Tracy, Stockton, Merced, Modesto

California Public Utilities Commission | Safety and Enforcement Division

4/9	PG&E Central Area (Comprehensive Standard Transmission Backbone - Tracy District & Rio Vista District / Station - Bethany / Local Transmission - Stockton Division & Yosemite Division)	Tracy, Stockton, Merced, Modesto
4/16	Central Valley Gas Storage (Damage Prevention)	Princeton
4/23	SDG&E: Borrego Springs (Liquefied Natural Gas)	Borrego Springs
4/30	PG&E Central Area (Comprehensive Standard Transmission Backbone - Tracy District & Rio Vista District / Station - Bethany / Local Transmission - Stockton Division & Yosemite Division)	Tracy, Stockton, Merced, Modesto
5/7	PG&E Central Area (Comprehensive Standard Transmission Backbone - Tracy District & Rio Vista District / Station - Bethany / Local Transmission - Stockton Division & Yosemite Division)	Tracy, Stockton, Merced, Modesto
5/7	SCG Distribution: NW - North Valley	Valencia, Braford, Lancaster
5/14		
5/14	Gill Ranch Gas Storage (Damage Prevention)	Madera
5/12	City of Victorville – Operation, Maintenance and Emergency programs	Victorville
5/21	Gill Ranch Gas Storage (Comprehensive Standard Transmission & Operation and Maintenance Plans)	Madera
6/4	SCG Distribution: SE - Inland South	Murrieta, Ramona, Riverside
6/11		
6/4	PG&E Gas Storage (Comprehensive Standard Transmission Los Medanos, Pleasant Creek, & McDonald Island)	Los Medanos, Pleasant Creek, & McDonald Island
6/11	PG&E Gas Storage (Comprehensive Standard Transmission Los Medanos, Pleasant Creek, & McDonald Island)	Los Medanos, Pleasant Creek, & McDonald Island
6/18	SWG North Tahoe, South Tahoe, Truckee Districts (Comprehensive Standard Distribution)	North Tahoe, South Tahoe, Truckee
6/25	SWG North Tahoe, South Tahoe, Truckee Districts (Comprehensive Standard Distribution)	North Tahoe, South Tahoe, Truckee
7/9	PG&E Peninsula Division (Comprehensive Standard Distribution)	San Carlos
7/16	PG&E Peninsula Division (Comprehensive Standard Distribution)	San Carlos
7/16	Wild Goose Gas Storage (Damage Prevention)	Gridley
7/16	City of Long Beach - Operation, Maintenance and Emergency programs	Long Beach
7/23	PG&E Northern Area (Comprehensive Standard Transmission Backbone - Willows District, Burney District, & Meridian District / Stations - Tionesta, Burney, Gerber, & Delevan / Local Transmission - Humboldt Division, North Valley Division, Sierra Division, & Sacramento Division)	Willows, Burney, Meridian, Eureka, Sacramento, Chico, Redding, Marysville, Auburn, Roseville
7/30	PG&E Northern Area (Comprehensive Standard Transmission Backbone - Willows District, Burney District, & Meridian District / Stations - Tionesta, Burney, Gerber, & Delevan / Local Transmission - Humboldt Division, North Valley Division, Sierra Division, & Sacramento Division)	Willows, Burney, Meridian, Eureka, Sacramento, Chico, Redding, Marysville, Auburn, Roseville
8/6	SEMPRA Transmission Integrity Management Plans - Protocols D&G	SCG and SDG&E
8/6	City of Coalinga (Comprehensive Standard Distribution & Operation and	Coalinga

California Public Utilities Commission | Safety and Enforcement Division

	Maintenance, and Emergency Plans)	
8/13	City of Palo Alto (Comprehensive Standard Distribution & Operation and Maintenance, and Emergency Plans)	Palo Alto
8/20	PG&E Northern Area (Comprehensive Standard Transmission Backbone - Willows District, Burney District, & Meridian District / Stations - Tionesta, Burney, Gerber, & Delevan / Local Transmission - Humboldt Division, North Valley Division, Sierra Division, & Sacramento Division)	Willows, Burney, Meridian, Eureka, Sacramento, Chico, Redding, Marysville, Auburn, Roseville
8/20	Sempra Public Awareness Plans	SCG & SDG&E
8/27	PG&E Northern Area (Comprehensive Standard Transmission Backbone - Willows District, Burney District, & Meridian District / Stations - Tionesta, Burney, Gerber, & Delevan / Local Transmission - Humboldt Division, North Valley Division, Sierra Division, & Sacramento Division)	Willows, Burney, Meridian, Eureka, Sacramento, Chico, Redding, Marysville, Auburn, Roseville
9/10	PG&E Central Coast Division (Comprehensive Standard Distribution)	Salinas
9/17	PG&E Central Coast Division (Comprehensive Standard Distribution)	Salinas
9/17	SCG Storage: Goleta	Goleta
9/24	City of Glendale - Operation, Maintenance and Emergency programs	Glendale
9/24	Lodi Gas Storage (Damage Prevention)	Acampo
10/1	PG&E North Bay Division (Comprehensive Standard Distribution)	San Rafael
10/8	PG&E North Bay Division (Comprehensive Standard Distribution)	San Rafael
10/1	SDG&E Distribution- South	South San Diego
10/8		
10/15	SWG PAP & ER	SWG CA
10/22	City of Susanville (Comprehensive Standard Distribution & Operation and Maintenance, and Emergency Plans)	Susanville
11/5	Central Valley Gas Storage (Comprehensive Standard Transmission)	Princeton
11/5	SWG: Needles	Needles

CONSTRUCTION INSPECTIONS

GSRB will continue its aggressive construction inspections for both transmission lines and distribution lines. GSRB's process owner for construction tracks and monitors the field inspections and is also responsible for continuous improvement of the construction process and procedures. Typical construction inspections will involve reviewing work plans, checking worker knowledge and competence through Operator Qualification evaluation, checking that the correct procedures are being used and that the crew is following the procedures, witnessing welding or fusing of pipe, witnessing pressure tests and proper back-filling. In 2018 GSRB also plans to incorporate unannounced field inspections.

GSRB will assemble all of the relevant Pipeline Safety Enhancement Plans (PSEP) work to date and post metrics on the CPUC's website. This will include miles tested, records verified, hydrostatic test failures, any integrity issues by category, etc.

INCIDENT INVESTIGATIONS

GSRB investigates more than 200 incidents a year. For latest statistics, please refer to the latest SED Monthly Report. The timeline expectations for completion of incident investigations and associated incident levels are provided below:

Table 4: Incident Levels and Timelines	
Level 1	60 days
Level 2	120 days
Level 3	150 days
Level 4	≥ 180 days

Level 1: The incident did not result in injury, fatality, fire or explosion. The incident may be due to an unrelated event outside of the Operator’s control. The assigned engineer’s investigation should focus on responding to the corresponding decision boxes. The incident report should be a short, simple statement stating the basis for closure (this would typically be a summary of the responses to the decision boxes). The incident should be finalized and approved by the Supervisor within 60 days after assignment to Staff³. Examples include: A vehicle damaging a meter-set assembly, a third-party dig-in caused by the excavator’s failure to request for an Underground Service Alert ticket, or fire incidents where the origin of the fire is unrelated to the gas systems, also referred to as “secondary ignition”⁴.

Level 2: The incident did not result in injury, fatality, fire or explosion. The incident may have been reported due to Operator judgment. The incident may have potentially been caused by the Operator’s non-compliance with code requirement. The incident should be closed⁵ within 120 days after assignment to Staff. Examples include: an over-pressurization of a pipeline, over-odorization, or an incident resulting in a controlled release or temporary disruption of supply to customers in which the Operator anticipates general public concern.

Level 3: The incident resulted in a release of gas but the incident did not result in injury, fatality, fire or explosion. Operator’s non-compliance with code requirement cannot be ruled out. The cause of gas release may have to be determined by laboratory tests and/or further analysis. The investigation should be closed within 150 days after assignment to Staff.

³ Incidents are assigned by the Supervisors on the day the incident is reported, or on the next business day if received after hours (between 0-3 days). Progress of incident reports will be tracked using the date the incident was reported.

⁴ Title 49 CFR Part 191, under *General Instructions* for filling out Form PHMSA F 7100.1, defines “secondary ignition” as a fire where the origin of the fire is unrelated to the gas systems subject to Parts 191 or 192, such as electrical fires, arson, etc., and includes events where fire or explosion not originating from a gas distribution system failure or release was the primary cause of the gas distribution failure or release, such as a house fire that subsequently resulted in – but was not caused by – a gas distribution system failure or release.

⁵ “Closed” includes approval of incident report and notifying the Operator of the probable violation.

Examples include a release of gas potentially caused by construction defect, mechanical failure, or corrosion.

Level 4: The incident resulted in injury, fatality, fire or explosion caused by release of natural gas from the Operator's facilities. A thorough investigation is needed and may take 180 days or more to close after assignment to Staff.

ALISO CANYON INVESTIGATION

SED is conducting an investigation into a leak at Aliso Canyon gas storage facility operated by Southern California Gas Company (SoCal Gas). On October 23, 2015, SoCal Gas crews discovered a leak in Standard Sesnon 25 (SS25) well and it subsequently took 112 days for SoCal Gas to stop the leak. The Division of Oil, Gas and Geothermal Resources (DOGGR) of the Department of Conservation and the CPUC have jurisdiction over the Aliso Canyon storage field. Both the DOGGR and the CPUC have launched parallel investigations. DOGGR has primary jurisdiction over the well and is focusing its investigation on the mechanical and operational condition of the well to determine the cause of the well failure and the subsequent natural gas leak.

The CPUC investigation is being conducted by SED. SED's investigation includes an assessment of SoCal Gas's emergency response; design, construction, operations and maintenance activities of the failed well; SoCalGas management of contractors involved in Aliso Canyon, actions both preceding and following the failure that the company took to promote the safety, health, comfort, and convenience of its patrons, employees, and the public at the Aliso Canyon storage field.

In addition, DOGGR and the CPUC jointly directed SoCal Gas to hire an independent third party to perform a technical root cause analysis of the well failure. The third party, Blade Energy Partners, was jointly selected by the agencies. Once the root cause analysis is complete, it will be shared with the agencies and the public. SED will review the root cause analysis and utilize the information as part of the investigation as needed. SED expects to complete its investigation by December 31, 2018.

UTILITY SELF-IDENTIFIED VIOLATIONS REPORTS

CPUC Decision 16-09-055 changed the reporting criteria from mandatory to voluntary for Utility Self-identified violations (SIVs). GSRB performs an investigation of the highest risk SIVs meeting its internal investigation criteria. SIVs not included as an immediate investigation are included in the annual review and then elevated to an investigation or closed. SIV investigations are also considered for citations where warranted.

GSRB PROCESS OWNERS (LEAD SUBJECT MATTER EXPERTS - SME)

GSRB Management has selected several experienced engineers to lead major work categories. The SME is responsible for drafting an annual work plan, creating, updating and promoting

procedures, being the “go to” person for technical questions and improving safety assurance in their given area. The GSRB Process owners are as follows:

- Paul Penney – Transmission Integrity Management
- Mahmoud Intably – Distribution Integrity Management
- Sunil Shori – Damage Prevention
- Michelle Wei – Emergency Response
- Jason McMillian – Propane (Liquefied Petroleum Gas)
- Ha Nguyen – Transmission Construction
- Terence Eng – Inspection Person Days, Self- Identified Violations
- Alula Gebremedhin – Inspector Assistant (IA)
- Kan Wai Tong / Dennis Lee inspections – Inspections
- Aimee Cauguiran / Matthewson Epuna – Investigations
- Sann Naing – Mobile Home Parks

MOBILE HOME PARK (MHP) AND PROPANE INSPECTION AND ENFORCEMENT PROGRAMS

The GSRB is responsible for ensuring the safety of mastered metered natural gas systems in mobile home parks. SED inspects mobile home parks that take natural gas service through a master meter and then distribute it to park residents through their own system of underground pipes. GSRB also inspects systems where liquefied petroleum gas (LPG), i.e. propane, is distributed from a master tank through underground pipes to multiple customers. GSRB has jurisdiction over Propane Master Tank systems serving two or more customers inside a mobile home park or 10 or more customers in residential or commercial districts. GSRB currently inspects over 2800 mobile home park operators and 600 propane operators once every seven years pursuant to a risk-based inspection schedule. Inspections consist of reviewing operation and maintenance records, evaluating emergency procedures, and performing field inspections of the gas or propane systems.

- Conduct at least 691 MHP and 265 propane inspections based on a risk-based inspection schedule
- Billing & collections are currently performed by the CPUC’s Fiscal Office
- Mobile Home Parks Pilot Program - CPUC decision D.14-03-021 established a three-year pilot program authorizing each California investor-owned utility to convert 10% of master-metered gas and/or electric Mobile Home Park spaces within its operating territory to direct utility service. The Pilot Program ran from 2015 -2017 and has been extended.

PROCEEDINGS

The following CPUC proceedings are natural gas related in which GSRB is involved:

- **Gas Safety OIR (R.11-02-019) (Commissioner Aceves/ALJ Kersten) (SED Advisory)** Adopt new safety and reliability regulations for natural gas transmission and distribution pipelines and related ratemaking mechanisms. SED provides advice, recommendations, technical reviews, and analyzes to the ALJ. SED filed a petition to modify Section 142.1 (plastic pipe storage) on August 11, 2017; a ruling on that motion is currently pending.
- **Citation Program OIR (R.14-05-013) (President Picker/ALJ Burcham) (SED Advisory)** Decision 16-09-055 was issued on September 29, 2016. This proceeding established the electric citation program and refined ALJ-274. It also imposed a cap of \$8 million, made reporting voluntary and adjusted the community notifications requirements. The Rulemaking was reopened because of a Petition for Modification, requesting that the Commission modify the Decision so as to keep in place, rather than weaken, the mandatory reporting requirements that were imposed under ALJ-274.
- **Feasibility of Minimizing or Eliminating the Use of Aliso Canyon Oil (I.17-02-002) (Commissioner Randolph/ALJ Semcer) (SED Advisory)** Senate Bill 380, Pavley. Natural gas storage bill repealed Section 715 and added Section 714 to the CA Public Utilities Code to require that the CPUC, no later than July 1, 2017, shall open a proceeding to determine the feasibility of minimizing or eliminating use of the Aliso Canyon natural gas storage facility located in the County of Los Angeles while still maintaining energy and electric reliability for the region. The CPUC was required to consult with State Energy Resources Conservation and Development Commission, the Independent System Operator, the local publicly owned utilities that rely on natural gas for electricity generation, the Division of Oil, Gas, and Geothermal Resources in the Department of Conservation, the affected balancing authorities, and other relevant government entities, in making its determination. This proceeding is still ongoing and the role of SED is to provide advisory support and has an assigned engineer; Yen Ken Chiang who is reviewing all the stakeholders comments, fillings and the ALJ's decisions. Yen Ken will attend the hearings and track the progress. Energy Division (ED) has put out a request for bid for a vendor to conduct the study. ED has been unsuccessful in retaining a vendor to conduct the necessary studies but ED is still working on retaining a vendor to perform the required studies. Meanwhile, the proceeding is on hold until ED retains a vendor.
- **Pipeline Open Access Rules and Related Enforcement Provisions for Biomethane (R.13-02-008) (Commissioner Rechtschaffen /ALJ Wong) (SED Advisory)** The Assembly Bill (AB) 1900, CA Public Utilities Code Section 784 requires the CPUC to adopt common carrier pipeline access rules to ensure that each gas corporation provides nondiscriminatory open access to its gas pipeline system to any party for the purposes of physical interconnecting with the gas pipeline system and effectuating the delivery of gas. The purpose of the law was to increase the use of Biomethane in California, thereby reducing the greenhouse gas emission. The CPUC issued several decisions on how to implement the AB 1900's directive. In the Decision 14-01-034 on January 16, 2014, the CPUC noted there was insufficient scientific evidence to justify lowering the minimum heating value for gas entering the public gas pipeline in California. Interested in obtaining a thorough review of available scientific

information relating to incorporating Biomethane into public gas pipelines, the Office of the Governor requested the California Council on Science and Technology (CCST) to prepare a report evaluating options for delivering Biomethane to public gas pipelines and potential cost impacts and safety. The role of SED is to provide advisory support in preparing the scope of work for the CCST's study as it relates to safety and public health impacts. As such, SED reviewed the scope of work prepared by CCST and provided comments on the key issues related to public health and pipeline safety. At this point, CCST has received comments from SED and other interested parties and have revised the scope of work accordingly. Michelle Wei is the assigned engineer.

- **A.15-09-013 Line 1600 - In The Matter of the Application of San Diego Gas & Electric Company and Southern California Gas Company for a Certificate of Public Convenience and Necessity for the Pipeline Safety & Reliability Project. (A.15-09-013) (Commissioner Randolph/ALJ Kersten) (SED Advisory)** This proceeding involves SDG&E's 50 mile Line 1600. SDG&E is attempting to build new and larger diameter gas transmission pipeline (Line 3602) in a different location and derate the existing Transmission line to operational distribution pressure and get out of pressure testing requirements. There is a question if the line will still be functionally transmission. SED issued a safety directive to SDG&E to do four things including reduce the Maximum Allowable Operating Pressure (MAOP) from 800 to 512 psig and the Commission subsequently issued resolution SED-1 to SDG&E. SED also performed a technical review of available records related to Line 1600 from the pipeline safety and integrity perspective, and it's Advisory opinion was sent by the ALJ to the service list.
- **PG&E Rule 1 violation OII (I.15-11-015) (Commissioner Picker/ALJ Mason) (SED Advocacy)** The Order Instituting and Ordering Pacific Gas and Electric Company to Appear and Show Cause Why It Should not be Sanctioned for Violations of Article 8 and Rule 1.1 of the Rules of Practice and Procedure and Public Utilities Code Sections 1701.2 and 1701.3 was issued on November 19, 2015. CPUC opened this investigation into PG&E's failure to timely report ex parte communications and for engaging in improper ex parte communications in violation of Article 8 of the Rules of Practice and Procedure (C.C.R. Title 20, Div. 1, Ch. 1, Sections 8.1 et seq.), Rule 1.1 of the Rules of Practice and Procedure, and Public Utilities Code (Pub. Util. Code) §§ 1701.2(c) and 1701.3(c) related to eight proceedings. The current status of the proceeding is active and SED is a party.

SPECIAL PROJECTS

Post San Bruno PG&E Special Audits

Decisions from the San Bruno Investigations (D. 15-04-024) require SED staff to perform several audits to ensure that PG&E is complying with the Decisions. The main audits are:

- PG&E MAOP Audit (dates TBD)
- PG&E Mariner Audit (follows MAOP Audit)
- PG&E Recordkeeping Audit (follows MAOP Audit)

SED filed an update with the Commission on December 27, 2017 and is seeking clarity on what the Commission intended by “independent”. SED had previously interpreted this criterion as mandating that any bidder must not have previously worked for PG&E however that has led to a limited qualified candidate pool.

Gas Safety Order Instituting Rulemaking

SED is drafting a plan for a new Rulemaking in late 2018 to revise General Order (GO) 112-F and incorporate additional safety assurance matters on integrity management, incident response, along with cleaning up ambiguities in several sections of GO 112-F.

Enforcement of 811 “Call before you dig” program

Excavation damages are the most frequent cause of incidents on the natural gas pipeline system. The state of California was audited by PHMSA in April 2016 and deemed inadequate with respect to enforcement on non-utility excavators. In 2016 the State of California established the concept of the “California Underground Facilities Safe Excavation Board” to enforce the provisions California’s One Call Law. The Board members have been appointed and regulations must be promulgated. Both the CPUC and the State Fire Marshall will lose points after 5 years if our status is not updated by PHMSA to adequate. The CPUC’s Damage Prevention Expert, Sunil Shori will continue to monitor and lead the CPUC’s damage prevention activities and will work on drafting a MOU with Cal-Fire.

ELECTRIC SAFETY AND RELIABILITY BRANCH

The mission of the Electric Safety and Reliability Branch (ESRB) is to enforce state statutes and regulations regarding the safety and reliability of electric facilities, communication facilities, and power plants that are within the jurisdiction of this Commission, to ensure that the facilities are operated and maintained in a safe and reliable manner to protect and promote the public health and safety, and to facilitate an environment inside and outside of the Commission that increases the safety and reliability of these facilities.

ESRB IN TRANSITION

This year will be crucial and challenging to ESRB, as we complete our reorganization and hire to fill staff vacancies while meeting an increasing work load. ESRB was reorganized in August 2017 to improve the efficiency of ESRB’s operation and function. Rather than the two sections being organized by type of facilities (a statewide Generation section and a statewide Electric and Communications Facility section), the reorganized ESRB has a Northern section and a Southern section. Each section is responsible for all electric facilities, communication facilities, and generating facilities that are located in its territory. Therefore, 2018 will be a transition period, with a need for cross-training staff and other steps to reorient work to more of a geographic basis. In addition, ESRB will be implementing a major new Wildfire Mitigation program as required by SB 1028 and newly-enacted Public Utilities Code Sections 8385 et seq. This program is described in detail below.

ESRB has 38 authorized positions, including 11 new positions received in FY 17/18 and several other vacancies. ESRB has made hiring a top priority and filled 11 positions in the last 6 months

of 2017 (including 2 internal promotions). At the beginning of 2018, 12 positions remained to be filled.

In order to ensure the safety and reliability of electric and communication facilities, and power plants in California, our focus in 2018 will include the following tasks:

- Hiring and training staff. As described in more detail below, ESRB's current resources hinder its ability to meet its mission and goals. During 2018, ESRB plans to fill its remaining vacancies and ramp up a comprehensive training program so that new and existing ESRB staff has the expertise and resources required to perform their work and meet all expectations.
- Wildfire mitigation program. ESRB is implementing the new wildfire mitigation program directed by Senate Bill 1028. ESRB is building its wildfire expertise through new staff positions and a collaborative working relationship with CAL FIRE. Goals include the establishment of procedures for submittal and CPUC review of utility wildfire mitigation plans.
- Major proceedings. ESRB will continue to participate in major proceedings at the Commission; improved staffing levels will enhance our ability to participate and advocate for rule changes where needed to promote safety and reliability.
- Incident investigations. ESRB will continue to thoroughly investigate electric incidents; additional staffing will allow us to determine in a more timely manner whether the utility or Generating Asset Owner violated any General Orders or other regulatory or statutory requirements.

Due to the staffing challenges, ESRB will need to be very careful about prioritizing the use of staff time; and because of work and time required to train new staff, the branch may not be able to accomplish all of the things that we would like to do in 2018.

HIRING AND TRAINING STAFF

A primary effort for ESRB in 2018 will be the hiring of new staff and enhanced training of both new and current staff. In 2018, the ESRB program will continue to grow in order to meet increasing demand. In addition to filling vital staff vacancies, ESRB received authorization to add eleven additional staff through two approved Budget Change Proposals (BCPs) and the transfer of vacant positions from elsewhere in SED. With the additional staff, ESRB plans to increase its regional, on-the-ground presence throughout California, achieve full roll-out of the new citation programs for electric and communication providers, increase the number of inspections and audits of electric and communication providers, improve its risk assessment capabilities, and implement new statutory provisions regarding utility wildfire mitigation plans.

As new staff is hired, they will be on boarded through the CPUC People Partners Onboarding program. Unlike GSRB, there is no federal or industry standard for certifying ESRB staff and engineers. To facilitate the development and productivity of new hires, ESRB management will expand and enhance its training and mentorship program so that the new ESRB safety staff is able to excel at their jobs.

WILDFIRE MITIGATION PROGRAM

Background

In February 2016, Senate Bill (SB) 1028 was introduced by Senator Jerry Hill; it was approved by the Legislature and Governor Brown signed it on September 24, 2016. SB 1028 establishes several new requirements for the CPUC and electric utilities through the addition of Sections 8385 through 8387 to the Public Utilities Code. SB 1028 establishes a general requirement for electric utilities to construct, maintain, and operate their facilities in a manner that will minimize the risk of catastrophic wildfire posed by electric lines. More specifically, SB 1028 requires that electric utilities develop and submit wildfire mitigation plans (Plans) that identify their risk factors and describe their responsive preventive strategies and programs. SB 1028 also requires the Commission to review and provide comments on the submitted Plans and to audit electric utilities' implementation of those Plans.

SED Response and Implementation of SB 1028

Following the enactment of SB 1028, SED began to implement the new requirements. SED received funding to hire three new staff for the wildfire program. SED has filled two of the three positions and plans to fill the final position in the first quarter of 2018.

ESRB is taking other steps to develop and supplement its wildfire expertise. SED has signed a MOU with the CAL FIRE, which establishes a collaborative working relationship between the agencies with respect to utility-caused wildfire-related issues. The MOU was signed after extensive meeting and discussion among varying levels of staff from technical experts to executive personnel. With the establishment of the MOU, and the recent rash of wildfires both in northern (October 2017) and southern (December 2017) California, SED and CAL FIRE have already hit the ground running to establish a much stronger working relationship and sharing of resources in response to the investigation and mitigation of utility-caused wildfires.

Next Steps for SED's SB 1028 Program

SED anticipates that the SB 1028 program will be fully staffed in the first quarter of 2018. The immediate goals of the program will be: (1) confer with CAL FIRE to determine the appropriate submittal dates and compliance period for the utilities' wildfire mitigation plans, (2) establish initial expectations for the substance and extent of the plan's contents, (3) obtain training and education, as appropriate, to cultivate internal wildfire expertise, and (4) develop procedures and deadlines for utility filings and for CPUC review and comment on the wildfire mitigation plans.

The initial groundwork between SED and CAL FIRE has begun. SED and CAL FIRE have met quarterly since third quarter 2017, to discuss the implementation of SB 1028 and other safety related matters. This collaborative work is planned to continue and help foster the types of discussion and knowledge/information exchange that will lead to the successful establishment of protocols and requirements for the utility wildfire mitigation plans. Additionally, SED has

begun, with the assistance of CAL FIRE, identifying training courses and curriculum to further SED's knowledge of wildfires and wildfire investigations. SED staff has commenced initial training courses. Further, the mutual field work and investigative overlap with CAL FIRE have allowed SED to identify other subject matter experts who may be able to provide additional training and education or supplement SED's wildfire expertise.

The prospect of future work with CAL FIRE and other subject matter experts is promising, and will go a long way toward ensuring the Commission's mission of the delivery of safe and reliable utility service.

PRIORITY RULEMAKINGS AND RELATED ACTIVITIES

In 2018, ESRB will continue its participation in several high-priority rulemakings and related activities, in which the Commission is considering significant changes to our safety programs for electric and communication facilities providers.

R.16-12-001: Consideration of Changes to Rule 18 in General Order 95 (President Picker and ALJ Kenney)(Advocacy) In response to a petition filed by SED, the Commission opened this rulemaking to consider whether to eliminate Rule 18, as SED has advocated, or alternatively adopt amendments to Rule 18. Rule 18 allows electric and communication providers up to 59 months to correct violations of GO 95, or to forgo corrections altogether if the provider deems the violation to be an "acceptable safety and/or reliability risk." While SED supported adoption of Rule 18 initially, in practice the rule has hindered SED's ability to compel utilities to correct safety hazards, to the detriment of public safety. In early 2017, SED and other parties began settlement discussions. SED and most parties reached a Settlement Agreement that would modify and improve current Rule 18. On October 6, 2017, SED and the other settling parties filed a joint motion requesting that the Commission adopt the Settlement Agreement. Comments and Reply Comments on the Settlement Agreement were filed in October and November 2017. This proceeding is pending a Commission Decision.

Rulemaking (R.) 15-05-006 (successor to R.08-11-005) Fire Safety Rulemaking (President Picker and ALJs Kenney and Kao) (Advocacy) These rulemakings are in response to the devastating wildfires of 2007. R.15-05-006 has identified high fire-threat areas in California. In December 2017, Commission Decision (D.) 17-12-024 adopted certain fire safety regulations within the High Fire-Threat District. In addition, a Peer Development Panel filed additional materials providing assessments and breakdowns of the final fire map. ESRB has updated General Orders 95, 165, and 166 with the new adopted safety rules. Also in January 2018, the final CPUC Fire-Threat Map was filed via Tier 1 Advice Letter and approved by a disposition letter from SED. As a result, the CPUC Fire-Threat Map became effective on January 19, 2018. In early 2018, the map will be disseminated in accordance with the requirements of previous Commission decisions. As directed in D.17-12-024, SED will submit recommendations in six months on whether to have proceedings on wind maps.

Pole management proceeding: Creation of a Shared Database or Statewide Census of Utility Poles and Conduit (I.17-06-027); Communications Provider Access to Poles (R.17-06-028); Competitive Local Exchange Carrier Wireless Facilities on Poles (R.17-03-009) (Commissioner

Picker/ALJ Mason/ALJ Kenney)(Advocacy) Issues in these consolidated proceedings include the status and use of databases and database applications in California regarding pole and conduit information, including pole location, attachments, material, ownership, and management; the implications of such data management for safety and access; and other steps to improve access by competitive communications providers to utility poles and conduit. A prehearing conference was held in December 2017. On January 11, 2018, the ALJ issued a ruling allowing parties to provide comments related to “data fields” that might be useful to industry participants and the Commission, from safety, competition, and access perspectives. Comments were due February 8, 2018. On February 5, 2018, a group of electric utilities and communications providers filed a motion for collaborative workshops. A scoping memo has not been issued as of mid-February 2018.

Proceeding to Consider Amendments to GO 95 (R.17-10-010) (Commissioner Picker/ALJ Mason) (Advocacy) As directed in D.16-01-046, SED filed P.17-03-004 to adopt, amend, or repeal certain rules in GO 95. In response to SED’s petition, the Commission opened R.17-10-010 in October 2017, to consider the amendments discussed in SED’s petition. Pursuant to the ALJ ruling, on November 15, SED and all interested parties met and developed a proposed schedule for the proceeding. On November 29, SED submitted combined comments and a prehearing conference statement. As of mid-February 2018, a prehearing conference has not been scheduled.

R.15-06-009: Physical Security of the Electric System (Commissioner Rechtschaffen and ALJ Kelly) (Advocacy): Phase I is addressing physical security for electric supply systems in California. Additional phases will address disaster and emergency preparedness plans for electric utilities and regulated water companies. ESRB has attended related workshops. In January and February, legal briefs were filed concerning the Commission’s jurisdiction over publicly owned electric utilities and rural electric cooperatives and comments were due regarding an evaluation by the Risk Assessment and Safety Advisory Section’s evaluation of a joint utility proposal regarding physical security.

Other Rulemakings: ESRB will continue to monitor proceedings in which safety issues might arise, and may take an advocacy or advisory role as needed. Current proceedings in which ESRB acts in an advisory role include:

- R.14-08-013: Distributed Energy Resources
- R.14-05-013: Natural gas and electric safety citation programs

INCIDENT INVESTIGATIONS

Electric utilities and Generating Asset Owners are required to report to the Commission any incidents that meet specified criteria to be classified as a “reportable incident.” These incidents typically are reported via a Commission online safety incident and emergency reporting portal available at <http://www.cpuc.ca.gov/emrep/>.

ESRB investigates all reportable incidents and responds to all customer inquiries and complaints. Based on historical volumes, electric utilities can be expected to report about 130

incidents in 2018 and Generating Asset Owners can be expected to report about 5 incidents. In 2017, ESRB engineers investigated 131 incidents and 255 public inquiries/complaints regarding safety and reliability of electric and communication facilities. Some of these investigations were a result of whistleblowers. While there are fewer incidents at generation facilities, the investigations of such incidents tend to be relatively complex.

ESRB classifies reportable incidents into four categories, as follows:

LEVEL	Criteria for incidents reported by electric utilities	Criteria for incidents reported by Generating Asset Owners	Target Processing Times
1	Incidents that don't meet Level 2, 3, or 4 criteria	Incidents that don't meet Level 2, 3, or 4 criteria	60 days
2	A power interruption not due solely to outside forces	Incident occurred during an electric Alert, Warning or Emergency (AWE)	120 days
3	Damage estimated to exceed \$50,000 and caused, at least in part, by the utility or its facilities	Significant outage that was due, at least in part, to plant equipment and/or operations	150 days
4	A fatality or injury that required hospitalization and was caused, at least in part, by the utility or its facilities	A fatality or injury that required hospitalization and was caused, at least in part, by plant equipment and/or operations	180 days or more, depending on circumstances

The following table summarizes the status of pre-2018 reportable incidents as of December 31, 2017:

Year	Number of reportable incidents	Incidents Open				
		Total	Level 4	Level 3	Level 2	Level 1
2016	110	23	12	8	3	0
2017	131	101	27	56	10	8

ESRB has a goal to close by July 1, 2018 all Level 1, Level 2, and Level 3 incidents that occurred prior to January 1, 2018, and to close the remaining pre-2018 Level 4 incidents as quickly as feasible thereafter.

ESRB prepares an incident report for each investigation, including an assessment of whether the utility or Generating Asset Owner violated any General Order or other regulatory or statutory requirements. ESRB typically notifies the utility or Generating Asset Owner of any violations and requires that a corrective action plan be submitted to ESRB. Notable incident investigations that are underway include the following:

- **Pacific Gas & Electric's 2017 Fire Siege:** In October 2017, a series of wildfires devastated many counties in Northern California. At the peak of the fires, there were 21 major wildfires that, in total, burned over 245,000 acres, 11,000 firefighters battled the destructive fires that at one time forced 100,000 to evacuate, destroyed an estimated 8,400 structures, and sadly, took the lives of 42 people. SED investigatory teams have been assigned and have visited the sites of affected areas to examine evidence related to PG&E's facilities. SED is working closely with CAL FIRE to investigate PG&E's and communications companies' compliance with the Commission's safety rules.
- **Southern California's 2017 Fires:** In December 2017, a series of wildfires devastated many cities in Southern California. Specifically, the Thomas Fire mostly in Santa Barbara and Ventura counties, which burned more than 281,000 acres, sadly resulted in the death of a fire fighter, and became California's biggest fire. SED investigatory teams have been assigned and have visited the sites of affected areas to examine evidence related to SCE's facilities. SED is working closely with CAL FIRE to investigate SCE's compliance with the Commission's safety rules.
- **Equipment Failure at Delta Energy Center:** In January 2017, a steam turbine failed at Delta Energy Center resulting in a generator fire. The turbine generator suffered major damage and was out-of-service for over a year. Luckily, no one was hurt. Delta contracted with Structural Integrity Inc. to perform a full root cause analysis which attributed the failure to erosion on the steam turbine blades. ESRB completed a draft investigation report and is in the process of verifying the plant's corrective actions to prevent recurrence, which includes working with Toshiba, the turbine's manufacturer, to develop more stringent criteria for the turbine blades inspection. ESRB submitted a data request on January 12 and has scheduled a complete audit/inspection of the facility in February 2018.
- **Worker Fatality at Sentinel Energy Project:** In March 2017, a worker was fatally injured at Sentinel Energy Project while performing routine maintenance work on a gas turbine. ESRB investigated the incident and concluded that the plant lacked proper lock-out tag-out procedures, which set off a sequence of events that ultimately led to the worker being fatally injured. ESRB completed a draft investigation report and is working closely with Legal on enforcement options. In July 2017, ESRB undertook a complete audit/ inspection of the facility.
- **Worker Injury at La Paloma Generating Station:** In April 2017, a worker was injured at La Paloma Generating Station while relocating a heavy load in a staging area. The injury required overnight hospitalization. ESRB investigated and determined that the plant was deficient in the conduct of its daily safety briefings to workers. Additionally, the plant's safety orientation video lacked crucial safety information that could have prevented the incident. ESRB completed a draft investigation report and a notice of violation, which will notify the plant to correct these deficiencies. ESRB anticipates to complete and closeout the investigation in early 2018.

ESRB monitors utility compliance with settlement agreements that have been approved in formal investigation proceedings (OIs) regarding incidents that ESRB has investigated. Settlement agreements currently being monitored include the following:

- **Power outages originating in Southern California Edison Company's secondary network system in Long Beach:** In I.16-07-007, SCE agreed to pay a \$4 million penalty and to spend \$11 million in shareholder money on agreed-upon system enhancement projects in the network system in Long Beach.
- **Subcontractor fatality in a Southern California Edison Company underground vault in Huntington Beach:** In I.15-11-006, SCE agreed to pay a \$2.01 million penalty and to implement agreed-upon enhancements to its safety program for contractors and subcontractors.
- **Subcontractor fatality at Pacific Gas and Electric Company's Kern Generating Plant:** In I.14-08-022, PG&E agreed to penalties and fines totaling \$5,569,313 and to implement an agreed-upon enterprise-wide contractor safety program and an agreed-upon enterprise causal evaluation standard.
- **Malibu Canyon fire:** Remediation and pole upgrade work required in I.09-01-018 after the 2007 Malibu Canyon fire is nearing completion. The entities with continuing obligations include Southern California Edison Company, AT&T Mobility LLC, Sprint Spectrum L.P., and Verizon Wireless.

AUDIT AND FACILITIES INSPECTION PLANS FOR 2018

ESRB conducts audits and related facilities inspections of electrical corporations, municipal electric utilities, electric cooperatives, Communication Infrastructure Providers, and Generating Asset Owners. ESRB's audit and facility inspection activities will be curtailed somewhat during 2018, due to the fire investigations, current staffing limitations, and the focus on staff hiring and training, which is necessary in order to build ESRB's audit/inspection program and other activities in subsequent years.

For electric facility providers and Communication Infrastructure Providers, ESRB has an internal goal of auditing each utility district (or equivalent) at least once every five years, with the frequency and scheduling of audits based on risk assessments considering risk factors such as the following:

- Location in high risk areas, including high fire threat areas
- Frequency and severity of General Order violations
- Frequency of reportable incidents
- Outage/reliability concerns
- Public complaints of poor safety or reliability performance
- Indication of poor construction or maintenance activities
- Extensive new construction
- Major municipalities and population centers

For generating facilities, ESRB currently is reassessing the audit/inspection program with the goal of improving its efficiency and effectiveness. ESRB has scheduled an audit of Calpine's Delta Energy Center in February 2018 because of the 2017 steam turbine failure and fire described above. ESRB plans to schedule and conduct at least three additional audits at generation facilities in 2018, taking into account risk factors such as the following:

- Location in high risk areas, including high fire threat areas
- Safety incidents
- Equipment failures
- Outage/reliability concerns
- A plant's age, megawatt capacity, and technology

ESRB is prioritizing facilities in high fire threat areas for audits during 2018. ESRB's planned 2018 audits/inspections are listed below:

ESRB Facilities Audits/Inspections Planned for 2018			
Week of:	Type of Audit/Inspection	Utility/CIP District	High Fire Threat District Tier(s)* or other risk factors
2/5/2018	Distribution	SCE - Antelope Valley	Tier 2, Tier 3
2/12/2018	Generating Asset Owner	Calpine – Delta Energy Center	Equipment failure
3/5/2018	Distribution	SCE - San Joaquin	Last audited 2012
3/5/2018	Distribution	PG&E - North Bay	Tier 2, Tier 3
4/9/2018	Distribution	SCE - Catalina	Tier 3, subject to corrosion
4/16/2018	Distribution	PG&E - Sierra	Tier 2, Tier 3
4/23/2018 (verify date)	Distribution	Shasta Lake	Tier 2
5/7/2018	Distribution	SDG&E - Beach Cities	Tier 2, subject to corrosion
5/14/2018	Distribution	PG&E - Sonoma	Tier 2, Tier 3
5/21/2018	Distribution	Lassen	Tier 2
5/22/2018	Distribution	SCE – Whittier	Tier 2, prior incident
5/23/2018	Distribution	Surprise Valley Electric	Tier 2
6/11/2018	Distribution	Azusa	Tier 2, Tier 3; prior violations
6/18/2018	Distribution	PG&E - Humboldt	Tier 2, Tier 3
7/9/2018	CIP	Charter - Malibu	Tier 2, Tier 3; prior incidents & complaints

California Public Utilities Commission | Safety and Enforcement Division

7/16/2018	CIP	COX - Orange County and Palos Verdes	Tier 2
7/16/2018	Substation	PG&E - Moss Landing	Incident
7/23/2018	CIP	Sierra-Tel	Tier 2, Tier 3
8/13/2018	Distribution	PacifiCorp – Yreka	Tier 2
8/20/2018 (verify date)	Distribution	PG&E – Los Padres	Tier 2, Tier 3
9/4/2018	Distribution	Moreno Valley	Tier 2, Tier 3
9/10/2018	Substation	Anaheim	Tier 2, Tier 3; first audit
9/10/2018	Substation	SCE – Mira Loma	New storage technology
9/10/2018	Distribution	SCE - Santa Barbara	Tier 2, Tier 3
9/10/2018 (verify date)	Distribution	Ukiah	Tier 2
9/17/2018	CIP	USA Communications - Julian/Borrego Springs	Tier 3; first audit
9/17/2018	Distribution	PG&E – Diablo	Tier 2, Tier 3
9/17/2018 (verify date)	Distribution	Plumas - Sierra	Tier 2
9/24/2018	Transmission	SDG&E - Orange County and North San Diego	Tier 2; first audit
10/1/2018	Distribution	SCE – Ontario	Tier 2
10/1/2018	CIP	Frontier - Goleta	Tier 2, Tier 3
10/15/2018	Distribution	Riverside	Tier 2, Tier 3
10/15/2018	Distribution	Trinity Public Utilities District	Tier 2, Tier 3
10/22/2018	Distribution	SCE - San Jacinto - Wildomar	Tier 2
10/22/2018	Distribution	Anaheim	Tier 2, Tier 3; prior violations
10/22/2018 (verify date)	Transmission	Table Mountain	Tier 2, Tier 3
10/29/2018 (verify date)	CIP	AT&T – Butte and Yuba Counties	Tier 2, Tier 3
11/5/2018	Distribution	SDG&E - Eastern	Tier 2, Tier 3
11/5/2018	Substation	PG&E - Vaca-Dixon	Tier 2, new storage technology

*High Fire Threat District Tier 2: elevated risk for destructive utility-associated wildfires.

Tier 3: extreme risk for destructive utility-associated wildfires.

ESRB conducted audits of four generating facilities in 2017: Mandalay Generating Station, High Winds Energy Center, Sentinel Energy Center, and Topaz Solar Farm. ESRB has issued audit reports for the audits conducted in the first half of the year and currently is verifying corrective actions taken by the owners. ESRB is finalizing audit reports for the Sentinel Energy Center and Topaz Solar Farm audits that ESRB conducted in the second half of 2017.

ENFORCEMENT ACTIVITIES

Incident investigations and facility audits/inspections include an assessment of whether the electric utility, communications provider, or Generating Asset Owner violated any General Order or other regulatory or statutory requirements. ESRB typically notifies the owner of any violations and requires that a corrective action plan be submitted. ESRB then monitors and works with the owner to ensure that the violations are corrected.

SED has been given authority to issue citations to electrical corporations (Commission Decision (D.) 14-12-001) effective January 1, 2015). The natural gas and electric safety citation programs were then refined and combined by D.16-09-055 effective September 29, 2016. And a citation program for Communication Infrastructure Providers was authorized by Commission Resolution SED-3 effective December 1, 2016. In addition to assessing monetary penalties of up to \$8 million, a citation requires the utility or Communication Infrastructure Provider to correct the identified violations. Three electric citations were issued in 2017:

- **June 6, 2017:** \$400,000 citation to PG&E for October 18, 2015 transmission tower failure near Moss Landing Substation/Monterey.
- **April 25, 2017:** \$8 million citation to PG&E for violation of General Order 95, Rule 31.1 for Butte wildfire ignited on September 9, 2015.
- **April 25, 2017:** \$300,000 citation to PG&E for violation of General Order 95, Rule 35 and Resolution E-4184 for Butte Fire ignited on September 9, 2015.

ESRB expects that its ability to implement the electric and Communication Infrastructure Providers citation programs will be enhanced in 2018, as additional staff are hired and trained.

INVESTIGATION OF OUTAGES AT POWER PLANTS

Pursuant to Public Utilities Code Section 761.3, ESRB enforces General Order 167 standards for operation and maintenance of power plants owned by Generating Asset Owners (GAOs) in California. In prior years, ESRB has investigated and inspected outages at large natural gas-fired power plants (plants whose capacity is 50 megawatts (MW) or more). ESRB changed its outage reporting and monitoring procedures in 2017.

First, ESRB's outage reporting requirements now apply to large renewable facilities in addition to large gas-fired power plants. Second, outage reporting requirements are now limited to (1) forced outages or derates of at least 50 MW that last at least 24 hours, and (2) planned outages or derates of at least 50 MW that last at least 72 hours. With these new procedures, ESRB can not only monitor plant outages more effectively but also analyze operational trends and perform analysis more efficiently. ESRB relies on historical outage data to help identify problematic patterns of forced outages, particularly at plants located in transmission-constrained areas or load pockets, so that it can target compliance audits more effectively.

ESRB also has changed the way power plants report their outages. In 2017, ESRB implemented web-based Power Plant Outage Reporting (PPOR), which allows the GAOs to report outages by directly entering outage information into a web portal. GAOs started reporting their outages

using the PPOR on December 1, 2017. The portal provides a secured and effective way of outage reporting and enables ESRB to better monitor and respond to major outages. In 2018, ESRB will continue to improve the PPOR to enhance users' experience and to increase functionalities based on GAO feedback. For example, the database will soon have an upload feature that will allow the GAOs to file their annual compliance certifications online, further improving ESRB's operational efficiency.

OTHER ACTIVITIES

Compliance filings: Electric facility and generating plant owners must submit several filings in compliance with General Order requirements. ESRB tracks timely submission, reviews documents for completeness and accuracy, and updates databases with the information provided. Filing requirements include the following:

General Order	Entities	Filing requirements	Due dates
GO 165	Owners of electric distribution and transmission facilities	Number of inspections by type and the number of required inspections not completed during the prior year.	July 1 of each year
GO 166	PG&E, SCE, SDG&E, PacifiCorp, NV Energy (formerly Sierra Pacific)	Emergency response plan, and prior year compliance with GO 166 standards for operation, reliability, and safety during emergencies and disasters	October 31 of each year
GO 174	Owners of substations not subject to CAISO operational control and/or FERC reliability standards	Summary of inspection program, including any changes, and summary of completed and past due inspections during the prior year.	July 1 of each year
GO 167	Generating Asset Owners with facilities \geq 50 MW, with certain exclusions	Maintenance plan summary and list of supporting documents for each maintenance plan standard	February 1 of odd-numbered years
		Verified statement regarding compliance with logbook standards	February 1 of odd-numbered years
		Operations plan summary (including emergency plans) and list of supporting documents for each operation standard	February 1 of even-numbered years

Transmission Maintenance Coordination Committee (TMCC): TMCC is an advisory committee to help the CAISO develop, review, and revise Transmission Maintenance Standards. ESRB is a member and attends quarterly meetings.

Coordination and cooperation: ESRB will continue to pursue increased coordination with other staff within the CPUC, and also with the CEC, CAISO, CAL FIRE, CalOES, CalOSHA, and other entities to improve the efficiency of our operations and activities. ESRB also observes and participates in utilities' emergency preparedness exercises around the state.

OFFICE OF RAIL SAFETY

The mission of the Office of Rail Safety (ORS) is to protect the public, rail workers, and the environment from unsafe rail operations and practices in the state. ORS strives to proactively and effectively enforce state and federal laws, regulations, orders, and directives relating to transportation of persons or commodities by rail.

ROGER CLUGSTON: DEPUTY DIRECTOR'S VISION

2017 was a year of progress and positive change within the ORS. For example, 2017 initiatives, such as our internal training program, specifically, the General Order Training Program (GOTP), reached the stage of implementation. The program is being further developed in 2018 to include more General Orders and Public Utility Codes training modules applicable to railroads, rail transit systems and rail grade crossings. GOTP is a long term goal, as there are many facets of regulatory training that will be beneficial for all ORS staff to be created. It is clear, at this point, that completing the training program to include all applicable General Orders and Codes for railroads, rail transit systems and rail grade crossings will take approximately three to five years more. This exemplifies progress and positive change for ORS.

In continuance of progress and positive change, it is essential for the ORS to continue with the proactive short and long term programs and projects discussed in previous annual work plans that have not yet been completed, due to their complexity, and to set new goals for 2018 to strive towards full implementation of these goals.

The following are new and ongoing tasks towards goals that we are addressing in 2018 to improve our safety culture, operational procedures and effectiveness:

- *General Order 164-D revision:*
 - *Required to meet Federal Transit Administration (FTA) new rulemakings;*
 - *Submit application for full FTA certification*
- *General Order 143-B revision:*
 - *Rule revision to clarify existing requirements and implement new ones.*
- *Regionalization:*
 - *Will take effect if current SED BCP is approved.*
- *Positive Train Control Assessment:*
 - *Increase evaluation and inspection numbers throughout California.*
 - *More participation in PTC training opportunities.*
 - *More detailed monthly reports.*
- *Rail Safety and Security Information Management System (RSSIMS):*
 - *Improve the effectiveness and efficiency of this data system*
 - *Develop wider routine usage within ORS.*
- *Railroad Tunnel Evaluation Program:*
 - *Record creation completed in 2017.*
 - *Field documentation to begin in earnest in 2018.*
- *Rail Head Wear Project:*

- Document head wear loss data through field inspections.
- Incorporate data onto spread sheets.
- Assess risks based on monthly head wear loss measurements.
- New Leadership opportunities for staff:
 - Assign new projects to interested staff.
 - Seek new ideas, encourage outside of the box thinking.
 - Continue to encourage Supervisorial staff to delegate.
- Institutional knowledge mentoring:
 - Continue to encourage inspection partnership with the more experienced staff.
- High Speed Rail:
 - Focus on the 21 projects currently underway in the San Joaquin Valley.
 - Increase participation in HSR construction and fire and safety meetings.
 - Continue site inspections, as HSR construction pace continues to increase.
- Risk Management program, utilizing the Risk Management Status Report (RMSR), specifically: looking beyond the regulations.
 - Focus on innovative ways to utilize the RMSR.
- Railroad Bridge Evaluation Program:
 - In 2018, we will reprioritize railroad bridges, steel bridges, based on each bridge's proximity to exposure to salt water from the Pacific Ocean.
 - Increase number of bridges inspected.
- General Order Training Program:
 - Training implemented in 2017.
 - Additional General Order training modules to be added in 2018.
- Future leader mentoring:
 - Exploring new ways to entice current staff who are willing to step up and lead by developing projects that proactively reflect the mission of ORS.

The ORS will continue to “look beyond the regulations” in every aspect of our daily work, as we have been doing for the past few years. Looking beyond the regulations is our way of life and, accordingly, a huge portion of our safety culture within the ORS.

My focus, as Deputy Director, is towards the future of the ORS...five, ten and twenty years down the road. I want to make every positive change that I can that will improve our effectiveness and efficiency in all aspects of our work. I want to explore more responsible, self-governing methods for rank and file, so that supervisors can spend more time in the field mentoring staff on the intricacies of our work, and less time using a computer monitor as a tool for identifying staff inadequacies without hands on remedies. When I retire, I want to leave the ORS in such a manner that its operation is orderly for those who come after me. I want to leave it so that our future leaders will more easily be able to focus on further enhancements and new innovative ideas that will greatly increase our ability to protect the People of California.

- Roger Clugston, Deputy Director, Office of Rail Safety, SED

RAILROAD OPERATIONS AND SAFETY BRANCH

PROGRAM SUMMARY

The CPUC Railroad Operations and Safety Branch (ROSB) support the CPUC on matters relating to freight and intercity passenger railroad safety. ROSB Railroad Safety Inspectors from five railroad disciplines (hazardous materials, track, operating practices, motive power and equipment, and signal and train control) examine railroad infrastructure to identify risks and determine, where appropriate, mitigation of risks associated with railroads that operate in California. Inspectors carry out proactive assessments of potential risks before dangerous conditions are created, e.g., as manifested in near-misses. Deficiency reports and/or civil penalty recommendations are used to identify non-compliant conditions. In addition, ROSB personnel may provide comments on major pending federal and state legislation, regulation revisions, and rail-related policies.

GOALS FOR 2018

In 2018, ROSB will continue improving upon the seven goals set out in the 2017 Work Plan. The primary work plan focus is ensuring that the railroad infrastructure transporting passengers, crude oil and other hazardous materials, and other freight products, is structurally sound. This will be accomplished by:

- Rigorous, thorough inspections and evaluations of railroad operations and infrastructure.
- Proactive risk management remedial actions and reporting.
- Monitoring and evaluating construction or rehabilitation activities for new crude oil and/or other hazardous materials routes to ensure railroad system infrastructure integrity.

Goal 1: Keep Boots on the Ground

A large component for public safety regarding the railroad industry comes from having experienced CPUC inspectors thoroughly examining railroad infrastructure and operations. This is the best method to validate that railroad operators have adequate operational, maintenance and inspection programs in place. Having Inspectors in the field performing thorough in-depth inspections has always been the core of ROSB operations. We will continue to refine and improve these processes through more rigorous in-house training and mentorship in 2018.

Goal 2: General Order Training Program - Expansion

Much of ROSB's regulatory authority in railroad safety comes from CPUC's power to promulgate and enforce its own General Orders. Several General Orders are targeted specifically at railroads, e.g., to maintain safe clearances between railroad cars and obstructions near tracks. ROSB's General Order Training Program (GOTP) is intended to develop Inspector skills in proper General Orders and Public Utilities Code identification, application, remediation and enforcement procedures, as well as familiarizing non-Inspector staff with these regulatory tools.

GOTP training was formally established in 2016. The initial General Order training modules are for General Orders 26-D, regulations governing clearances between railroads and side structures, overhead structures, and other obstructions; and 118-A, regulations governing walkways adjacent to tracks. The modules have been completed and are being implemented.

This comprehensive training program includes initial assessment of participant skills via an assessment test, classroom training in regulatory principles, field training and mentoring, and a final assessment of course material understanding by participants. Upon completion, participants are certified for a period of one year, with annual requalification training required. GOTP development will continue through 2018 and beyond to include all rail-related General Orders and applicable Public Utilities Codes.

Goal 3: Risk Management Status Report Process

ROSB will focus on training staff innovative usage of Risk Management Status Reports (RMSR). In the course of field work, ROSB Inspectors sometimes identify items of concern that are either: (1) out of their area(s) of expertise; (2) outside of formal/official reporting and action protocols; or (3) despite prior formal or informal regulatory action, are still safety risks. When this happens, the Inspectors complete an RMSR. Apart from documenting ROSB's risk management efforts, RMSRs are used to notify railroads and other responsible parties of risks, which frequently results in actions being taken by these parties to eliminate these risks and prevent their recurrence. The level of success attained since its inception has shown this is a valuable tool for the Inspectors. For example, there was a track passing under Interstate 5 in the San Joaquin Valley. This was an old railroad line, still in use, but infrequently. During the crude oil boom in 2011 – 2014, this line was to receive more crude oil unit trains than had ever been imagined. There was a need for track rehabilitation to handle these potential volume increases. The RMSR was used to compel the railroad to add another set of rails in the track (known as guard rails). Guard rails placed between running rails reduces the chance of a derailed train from rolling down the track embankment and striking the support pillars of the Interstate 5 overpass by keeping the rail car wheels up on the track bed. Guard rails traditionally have been used in such a manner, but they are not a regulated requirement. This action via the RMSR by CPUC staff improved safety for the public at this location by presenting a safety solution to the railroad that otherwise would have been disregarded. ROSB staff is continuing to find new uses for the RMSR, such as identifying poor safety culture practices within a railroad or shipper facility or locality. This proactive work will be improved upon in 2018.

Goal 4: Continue to Monitor Crude Oil and Coal Train Movements

The ROSB Crude Oil Reconnaissance Team (CORT) is comprised of Inspectors from different railroad disciplines (hazardous materials, Track, and Motive Power and Equipment). CORT inspects major crude oil railroad projects, such as crude oil transfer facilities and related railroad infrastructure, for compliance with applicable regulations, with a focus on proactive risk assessments. CORT also monitors crude oil and coal train movements into and within

California, and creates monthly reports documenting these movements. These reports assist staff when discussing associated concerns with railroad officials and shippers.

It is difficult to anticipate the volume of crude oil rail shipments that will enter California over the coming year, as the market is so volatile. CORT will continue to monitor the shipments that do occur as well as its crude oil rail infrastructure inspection activities.

Goal 5: Railroad Bridge Evaluation Program - improvements

The Railroad Bridge Evaluation Program (RBEP) began as a project in December 2013. ROSB will work on prioritization improvements for RBEP. In 2018, this program is being expanded to include rail transit systems, as well.

RBEP performed 143 bridge observations in 2017. The goal for 2018 is to increase that number to 160. California has over 6,500 railroad bridges, some of which are over a hundred years old. The Federal Railroad Administration (FRA) has only one bridge inspector for the entire western region, which covers ten other states besides California. One of the many reasons RBEP was starting was due to the small number of FRA Bridge Inspectors (5) in the entire US, handling more than 85,000 bridges. RBEP development has improved ROSB efforts to better ascertain the condition of California railroad bridges from a risk management perspective. In the beginning of the program, a general list was created that prioritizes bridges for evaluation, based on such factors as population density in the vicinity, whether the bridge is used by short line railroads, and whether passengers are carried on that route. In 2018, RBEP is reprioritizing steel bridge structures, focusing on those that are old and in close proximity to the ocean. This is needed to assess steel bridge integrity from the effects of salt water on steel structures over many decades of operation.

During the last quarter of 2017, RBEP identified potentially hazardous conditions on several steel bridges along coastal areas, including identifying some bridges on the Yuma Subdivision that exhibited what appeared to be structurally unsound conditions from rust and age. ROSB bridge staff has shared their findings with the responsible railroad bridge personnel who are implementing immediate remedial actions and preparing curative plans to resolve the conditions noted.

In 2018, RBEP will continue its close partnership with the FRA bridge inspection program in determining the compliance of railroad bridges with FRA regulations and bridge structural integrity.

Goal 6: Positive Train Control Program - improvements

Positive Train Control (PTC) describes integrated command, control, communications, and information systems for controlling train movements, which are designed to automatically stop or slow a train before certain accidents occur. Specifically, PTC is designed to prevent train-to-

train collisions, derailments caused by excessive speed, unauthorized incursions by trains onto sections of track where repairs are being made and movement of a train through a track switch left in the wrong position.

ROSB's PTC Team and inspection staff have been actively engaged in design review, observations, and inspections during the development and construction of PTC systems in California. ROSB's Positive Train Control Program is staffed by two Inspectors. In 2018, the PTC Program's goal is to increase field observations and provide more in-depth information in monthly reports that assess passenger and freight PTC interface. The PTC team was without one inspector for a portion of 2017, due to that employee leaving state service. That position has been filled with an inspector who has extensive railroad experience. The PTC team will be travelling throughout the state more frequently in 2018 to better gain an assessment of PTC interface between rail carriers as the PTC implementation date closes in.

The Federal Rail Safety Improvement Act of 2008 required all Class I railroads and intercity passenger and commuter railroads to implement a PTC system by December 31, 2015, on all main-line track where intercity passenger railroads and commuter railroads operate and where toxic-by-inhalation hazardous materials are transported. In late 2015, Congress extended the deadline by at least three years to December 31, 2018, with the possibility of an extension to a date no later than December 31, 2020, if a railroad completes certain statutory requirements that are necessary to obtain an extension.

Goal 7: Inspector Activity Reports - improvements

Inspector Activity Reports, previously called Weekly Activity Reports (or WAR reports), describe findings ROSB Inspectors make during routine inspections, accident investigations and surveillance activities. ROSB's Program and Project Supervisor and her assigned PURA staff are working with field inspection staff to further develop a uniform process for creating an IAR. In 2018, these reports will more thoroughly reflect the work that ROSB field inspectors perform, better communicate the situation depicted by the inspector for the reader and then conclude the report with solutions and/or action plans. These reports are great examples of ROSB work to share within the CPUC, or for Public Outreach purposes, and for review in staff meetings as training tools for staff edification.

MAIN WORK ACTIVITIES

The main work activities of ROSB are field inspections and incident investigations. Below is the summary of the volume of work performed and goals in each of those categories:

Inspections

ROSB has 40 Inspectors. In 2017, they performed more than 4,000 inspections, cited over 10,000 federal regulation non-compliances, recommended 258 civil penalties for regulatory violations, and completed 248 CPUC General Order reports that identified 828 state regulation non-compliances. All noncompliant state and federal conditions are immediately remediated by the responsible railroad officer, or an action plan for remediating noncompliance conditions

is prepared by the responsible railroad officer and given to, and approved by, the CPUC inspector who found the condition. In egregious noncompliance situations, or situations where the responsible railroad officer has failed to follow through with a previously prepared remedial action plan, civil penalties are recommended by CPUC inspectors.

Hazardous materials inspections at California sea ports:

- 471 inspection days in 2016; increased to 590 inspection days in 2017, with the goal of 615 inspection days for 2018.
- 2018 goal - Increase sea port inspection collaboration with US Coast Guard from occasional to weekly.
- 2018 goal - In compliance with the Local Community Rail Security Act of 2006, California Public Utilities Codes 7665 to 7667, two Hazmat and Security inspectors will review and report on the adequacy of railroad security plans for the 35 railroads located within the State of California - by May 1, 2017

Track inspectors:

- 35 walking miles per inspector in 2016; increased to 40 miles per inspector in 2017.
- Goal for 2018 is to increase walking inspections to 45 miles per inspector.

Operating Practices inspectors:

- Passenger train head-end (locomotive) ride observations averaged 1 per month, per inspector in 2017.
- 2018 Goal - Increase passenger train head-end ride observations to 2 per inspector, monthly. 1 PTC train ride observation and 1 freight train ride observation.
- 2018 goal - Perform quarterly locomotive engineer certification audits.
- 2018 goal - Participate with FRA in all mountain grade audits.

Motive Power & Equipment inspectors:

- Immediate 2018 focus is on training two of new MP&E inspectors towards FRA Certification.
- Goal for 2018 is to make as many mandated inspection points possible, although short staffed until new inspectors are certified.

Signal & Train Control (S&TC) inspectors will:

- Immediate 2018 focus is training for two new S&TC staff towards FRA certification.

Quarterly Focused Inspections

Each quarter all disciplines conduct a quarterly focused inspection, concentrating on problematic issues or locations that pose heightened potential risks. The decisional criteria for conducting a focused inspection is based off of observations discovered by inspectors during routine inspections or after accident investigations or various other issues or perceived problems identified by staff and supervisors. Disciplines produce a formal write up, complete with results of the inspection, deficiencies, and/or civil penalty recommendations. These

findings are shared with the railroad or shipper for an action plan to mitigate or resolve the issues.

Investigations

ROSB receives over 800 incident reports every year. All are reviewed and determination is made as to which incidents will require further investigation. Typically, 10 to 15 percent require full investigation. ROSB policy is to conduct investigations on all at grade crossing accidents and incidents. Any incident or accident that occurs 50 feet or less from an at-grade crossing is also investigated, as that distance is considered part of the grade crossing for such investigations. All mainline train derailments that occur are designated as high priority and are investigated. Standard protocols have been established for staff when they are asked to gather accident/incident information. These include taking photographic evidence and obtaining train operational technical information while on site at any accident /incident. That information is essential in preparing an accident investigation report to explain the cause of the accident/incident.

IMPROVE QUALITY OF WORK PRODUCTS

ROSB is dedicated to continuous improvement of work products. The following are the goals for 2018:

- For all major types of ROSB work products, further develop consistent templates and examples of completed work products that represent the quality of execution that exceeds minimum requirements.
- Raise the overall quality and integrity of work products being produced by developing clear management expectations, effectively communicate those expectations to staff and hold supervisors and staff accountable for effective execution of those expectations.
- Provide railroad safety inspectors and analysts with thought-provoking assignments that identify the greatest public, railroad employee, and environmental risks, and propose recommendations that would most effectively mitigate those risks

TECHNICAL SKILLS DEVELOPMENT

ROSB is dedicated to maintaining the highest skill levels of staff and provide opportunities for all members of ROSB to grow in their careers. The following are the priorities for 2018:

- Each team (e.g. Railroad Bridge Evaluation Program, Crude Oil Reconnaissance Team, Risk Management Team) to identify training opportunities to be incorporated into team goals.
- Supervisors and management to research more training opportunities; seek staff input to assist by identifying new training opportunities.
- Encourage staff to take on more leadership roles commensurate with their duties and abilities.
- Further develop the General Order Training Program throughout ROSB in 2018.

RAIL SAFETY RISK MANAGEMENT AND HIGH SPEED RAIL

The mission of the ORS Risk Assessment (RAU) is to provide advice, backed by reliable technical analysis, which can be used by CPUC management to improve their rail inspection efforts and to give input to railroads on improving the safety of their operations.

The RAU is comprised of engineers and analysts who identify rail-related hazards and techniques to mitigate risk. The unit reviews the results of audits, inspections and investigations, performs on-site observations of California's rail-related utility operations and infrastructure, monitors rail sector trends, and formulates options to mitigate the risks so identified. This may entail "looking beyond the regulations" – looking at ways in which safety can be improved that are not currently required by federal or state law.

The RAU group has taken advantage of technological advancements that could affect the risk management strategies of railroads. One example is the use of geographic information systems (GIS) mapping and statistical tools that can be used for a variety of rail-related operational and regulatory purposes. CPUC has invested in GIS tools such as ArcGIS, a mapping and statistical software application, which can be used to map such data as rail accidents, population densities, and the locations of particular interest (e.g., bridges, tunnels, and highway-rail crossings). In this way, GIS can be used by the RAU to assist in identifying locations where ORS resources can be targeted.

The RAU work plan for 2018 includes:

- Utilizing ArcGIS and statistical analysis of data to identify accident "hotspots"
- Adding tunnels as a focus of risk assessment
- Prioritizing the observations of rail bridges based on their risk potential

HIGH SPEED RAIL TEAM

The High Speed Rail Team is comprised of one Senior Utilities Engineer and one Public Utilities Regulatory Analyst. Additionally, Utilities Engineers from the Rail Crossings and Engineering Branch (RCEB) work alongside the team on the existing crossings and roadways impacted by the proposed High Speed Rail corridor. In 2018, the High Speed Rail Team plans to:

- Meet with California High Speed Rail Authority (CHSRA) and contractor representatives to discuss CPUC oversight and related issues and to ensure conformance with CPUC General Orders.

- Review available CHSRA design plans, specifications, etc. for conformance with GOs and other relevant standards.
- Attend CHSRA Fire and Life Safety and Security Committee meetings in person or by phone.
- Monitor HSR developments via CHSRA communications and articles in relevant periodicals.
- Coordinate visits to HSR construction sites with Office of Rail Safety inspectors to observe progress.
- If any HSR-related Risk Management Status Reports are submitted by ORS inspectors or other personnel, discuss with CHSRA and resolve.
- Provide input to HSR-related Rail Safety Advisory Committee proceedings and Federal Railroad Administration rulemakings as appropriate.

RAIL TRANSIT SAFETY BRANCH

PROGRAM SUMMARY

The mission of the Rail Transit Safety Branch (RTSB) is to ensure that California Rail Transit Agencies (RTAs) design, construct, maintain, and operate their systems in a safe and secure manner for passengers, employees, and the general public. RTSB is responsible for implementing the rail transit and other fixed guideways safety program for the State. The Commission has been designated by the Governor's office as the State Safety Oversight Agency for participation in the Federal Transit Administration's (FTA) State Safety Oversight program.

RTSB staff performs inspections of RTA facilities and activities. RTSB staff also reviews accident investigation reports prepared by RTAs, and where appropriate, participates in RTA led accident investigations. If deemed necessary, RTSB conducts its own investigations of accidents. RTSB also conducts comprehensive Triennial Safety and Triennial Security Audits of RTAs; develops new or modified Commission General Orders (GOs) related to RTA safety; monitors transit agency operational and safety activities and analyzes; evaluates new project safety certification plans; facilitates communications between FTA and RTAs by notifying RTAs of all FTA Safety Directives and Safety Advisories; and collects data requested by FTA from RTAs. RTSB also evaluates and recommends certain RTA plans for Commission approval, including safety certification plans covering new major projects.

TRIENNIAL AUDITS AND REPORTS

RTSB performs comprehensive safety and security audits of RTAs on a triennial basis. These audits involve reviews of RTA operational processes and procedures pertaining to compliance with CPUC's GOs and federal rules/regulations. RTSB staff review RTA records and perform site inspections and other activities to evaluate the RTAs' implementation of their system safety program plans, standard operating procedures, accident investigations, and maintenance practices. For each RTA, RTSB conducts one triennial audit review focused on RTA safety, and another focused on RTA security. The triennial safety audits typically last one to two weeks, and

involves a dozen or more RTSB inspectors and engineers. The audit activities and findings are then presented in a report which, depending on workload, typically takes 10 to 15 weeks to compile. The triennial security audit is typically conducted concurrently with the triennial safety audit, but is documented in a separate report. Each of the two reports requires a Commission Resolution offering the report and findings for the Commission's review and approval.

In 2017, RTSB performed three triennial audits. Three triennial audits are scheduled for 2018. Below is the schedule for the triennial audits and corresponding reports:

Transit System	Audit Dates	Target CPUC Voting Meeting
BART	9/11-22/2017	April 2018
Sacramento Regional Transit	10/9-20/2017	May 2018
Santa Clara Valley Transit Authority	11/6-17/2017	May 2018
North (San Diego) County Transit District	August 2018	February 2019
San Diego Trolley	June 2018	Nov 2018
San Francisco Municipal Transportation Agency	Sept/Oct 2018	March 2019

INSPECTIONS

RTSB performs ongoing inspections of transit agency facilities, operations, and construction to assess compliance with federal and state regulations, including CPUC General Orders, industry standards, and the RTAs' own operating procedures. RTSB typically performs more than 150 inspections a year in four areas: (1) track, (2) signal and train control, (3) mechanical (vehicles), and (4) operating practices.

Inspections are scheduled in advance (i.e., announced). Occasionally, RTSB inspectors conduct unscheduled (unannounced) inspections. Findings of inspections are discussed with agency representatives before RTSB Inspectors leave the RTA properties. After each inspection, an inspection report is generated and sent to an RTSB supervisor who, after his or her review sends it to the RTA concerned within 10 business days. If the inspection identifies safety concerns that require corrective action, the RTA must respond within 30 days with either completed corrective actions or a corrective action plan (CAP), a timeline for its implementation, and the RTA staff responsible for its completion. Inspectors monitor responses and field-verify the corrective actions and CAPs. The inspection is considered closed when RTSB sends a follow-up report to the RTA accepting the corrective action or CAP. Out of 291 inspections conducted in 2017, 59 currently remain open pending receipt of reply from the RTA or inspection report completion.

INCIDENT INVESTIGATIONS

Transit agencies are required to report incidents and accidents to the CPUC. Typically, RTSB receives more than 250 rail transit incident notifications a year. GO 164-D requires RTAs to investigate and CPUC staff to review and approve RTA accident investigation reports. As of

beginning of 2018, there were 269 open accident investigations. About 15 percent of those have been completed by staff and are being evaluated by management for potential closure. Most of the remainder are from calendar year 2017, and are in various states of completeness. RTSB tracks accident investigation closeouts by rail transit agencies and any CAPs associated with them. In some cases, RTSB may conduct additional on-site accident investigations for information needs or conduct on-site follow-up investigations. Workload associated with this element is highly variable due to the complexity of the investigations, as well as other factors.

National Transportation Safety Board Accident Investigations

The National Transportation Safety Board (NTSB) is an independent Federal agency charged by Congress with investigating every civil aviation accident in the United States and significant accidents in other modes of transportation – railroad, highway, marine and pipeline. The NTSB determines the probable cause of the accidents and issues safety recommendations aimed at preventing future accidents.

When an accident occurs, the severity of which initiates an investigation by the NTSB, RTSB works in concert with the NTSB and the involved RTAs to complete accident investigations and address accident findings.

CORRECTIVE ACTION PLAN TRACKING

As described previously, corrective action plans are developed by RTAs to address findings (e.g., non-compliance with regulations or adopted procedures) resulting from the various types of inspections and investigations. CAPs establish the proposed actions and responsible agency personnel that will implement and track the CAP to closure. RTSB reviews the proposed CAP to determine their adequacy in addressing inspection and investigation findings and either approves or requires CAP modification. Routine meetings are held with RTAs to assess CAP status and update staff records regarding them. Typically, RTSB reviews between 150 and 200 CAPs every year. RTSB tracks CAPs and closures in the Rail Safety and Security Information Management System (RSSIMS) database, and inspections on MS Excel spreadsheets. CAP entry and tracking involves significant data entry and time to review and update CAP records.

RESPONSES TO FEDERAL NOTICES OF PROPOSED RULEMAKINGS (NPRMs)

In 2015 and 2016, RTSB staff spent considerable time reviewing and preparing comments in reply to Federal NPRMs pertaining to rail transit safety. In 2017, there were no new NPRMs. FTA has announced its plans to issue an NPRM in 2018 pertaining to Public Transportation Agency Safety Plans.

FEDERAL TRANSIT ADMINISTRATION CERTIFICATION AND GRANT FUNDING OF RAIL TRANSIT STATE SAFETY OVERSIGHT AGENCIES (CPUC's RAIL TRANSIT SAFETY PROGRAM)

In September of 2013, CPUC submitted documentation pursuant to FTA requirements to seek certification of the CPUC rail transit safety oversight program, as well as grant funding made available by Congress for up to 80% of a state's rail transit safety oversight program costs. The

CPUC program was one of only two programs nationwide to, as stated by FTA, “meet the baseline for pre-certification” based on the existing program. In 2018, upon Commission approval of GO 164-E (revision effort of current GO 164-D due to new FTA rulemakings), RTSB plans to submit its application for full FTA certification of its program.

RTSB General Order and Program Standard Procedures Manual Revisions

Federal rulemakings and changing requirements promulgated by FTA will require that CPUC update GO 164, and that RTSB make major revisions to its Program Standard Procedures Manual. These efforts, which are nearly completed, will require significant commitments in staff resources, although the extent cannot be quantified at this time. Staff will need to revise their inspection and triennial audit processes as well as reassessing what data are tracked in order to meet the new requirements. Updates must be implemented by mid-2018.

During 2014 and 2015, RTSB completed an FTA grant application to partially cover its safety oversight program costs (up to 80% of safety oversight costs of FTA funded RTAs), which was approved for funding in 2015. In 2015, RTSB received its first grant award and in 2016 received its second grant award. RTSB has developed internal tracking mechanisms and has worked with Information Technology, Human Resources, Fiscal and the other administrative staff at CPUC to monitor eligible expenses in order to submit reimbursement requests to FTA for the grant funds. During 2016, RTSB worked with the Administrative Services Division to begin drawing down the grant funds. In 2017, RTSB applied for and received its third grant award, and exhausted funding from its first grant award. In 2018, if the U.S. Congress renews funding for the program, RTSB plans to apply for a fourth grant award.

A number of internal RTSB processes and procedures have been changed and may need to be further modified and tracked differently to assure that only eligible costs are included in the grant reimbursement requests. As we develop and submit reimbursement requests, we will determine the adequacy of existing processes and the advisability of making further changes. Tracking eligible costs and staff time, as well as submitting reimbursement requests, will present a significant work element for the transit safety program in the future.

FTA Meetings

FTA’s Transit Advisory Committee for Safety (TRACS) provides information, advice, and recommendations to FTA on transit safety and other issues as determined by the U.S. Secretary of Transportation and FTA Administrator. RTSB participates in and provides essential input to TRACS, to assure that California priorities are addressed as the FTA develops a more active role, as Congress directed, in relation to State Safety Oversight activities. RTSB also participates in the annual meeting of State Safety Oversight Agencies, along with FTA, as part of our participation in rail transit safety as an oversight agency. Finally, RTSB participates in quarterly conference calls with FTA and all other SSOAs in the nation, and monthly one-on-one conference calls with the FTA.

BART ORDER INSTITUTING INVESTIGATION

During 2016, CPUC staff received video and other data from the NTSB on the BART double fatality accident on October 19, 2013. Evaluation of the data resulted in staff filing a request for the Commission to open a formal investigation for determining whether BART should be fined or otherwise penalized for actions or inactions that staff believed were either causal or contributory to the accident. Staff filed testimony in the proceeding during February 2017. Hearings were held and final briefs were submitted. On December 18, 2017, the Commission issued a ruling extending the statutory deadline for this proceeding until June 23, 2018, to consider pending appeals filed by both BART and RTSB staff of the draft Presiding Officer's Decision.

REVISION TO GENERAL ORDERS

General Order 143: Safety Rules and Regulations Governing Light-Rail Transit

RTSB plans to initiate a General Order 143 revision rulemaking for during 2018. Staff has identified a number of rule revisions that would clarify existing requirements and implement new ones to address deficiencies identified in field inspections and audits. Additionally, General Order 143-B provisions should be expanded to apply to "heavy or rapid" rail transit systems such as BART and the LA Metro Red Line subway. Staff has developed a draft rule and report to initiate a General Order 143 rulemaking during 2018.

General Order 175-A: Roadway Worker Protection & General Order 172: Use of Personal Electronic Devices by Employees

These two General Orders were promulgated in response to transit accidents resulting in roadway worker fatalities. Under the terms of the Decision adopting General Order 175-A, staff were required to file recommendations to reconcile differences in these General Orders by March of 2017. Staff held an informal workshop with rail transit agencies during January 2017 to discuss whether such changes are advisable. Staff filed its recommendations in proceeding R.09-01-020 as directed by the assigned Administrative Law Judge. On October 30, 2017, Commissioner Rechtschaffen issued a proposed decision, finding that all issues relating to GO 175-A have been resolved and closed the rulemaking. That proposed decision also stated an intention to open a new rulemaking to consider SED's proposed amendments to GO 172. On November 30, 2017, CPUC issued Decision 17-11-017 that closed R.09-01-020 and deferred the consideration of Staff's recommended changes to GO 172 to a new prospective proceeding.

General Order 164: Rules and Regulations Governing State Safety Oversight of Rail Fixed Guideway Systems

Some modifications of General Order 164 will be needed to accommodate changes in federal regulations resulting from FTA adding Part 674 to Chapter 49 of Code of Federal Regulations (49 CFR Part 674) in 2016. Additional changes will likely be necessary when FTA issues its planned rules for Public Transportation Agency Safety Plan, which will be adopted as 49 CFR Part 673. RTSB staff will be involved in the rulemaking to assure that the final rule is comprehensive and enforceable.

DATABASE IMPROVEMENTS

The Rail Safety and Security Information Management System (RSSIMS) database is used by all three rail branches. The Office of Rail Safety needs to improve and make wider use of RSSIMS in the daily work. During 2017, RTSB continued to work with the other rail program representatives on the RSSIMS Committee to develop ways to upgrade the RSSIMS system to allow for bulk uploads and downloads of data, in coordination with CPUC's Information Services Branch.

Currently-tracked Corrective Action Plans and inspection data will be transferred into RSSIMS from MS Excel spreadsheets. As time permits, RTSB will also continue to work on a complete inventory of all rail transit crossings to update our records in RSSIMS. There are roughly 1,300 at-grade rail transit crossings in California.

TRAINING

In February 2015, FTA issued "Final Interim Safety Certification Training Provisions," which requires State Safety Oversight Agencies to develop Technical Training Plans (TTPs) for their staff, provides for a list of required training classes, and establishes requirements for developing minimum core competencies in for specific oversight activities. In September 2015, RTSB submitted a TTP to FTA. FTA provided feedback, which was incorporated into a revised TTP on November 29, 2016, and RTSB staff has been operating under the resulting TTP. Staff have been taking training classes and receiving the required certifications. The RTSB TTP includes four core courses which are required to obtain a Transit Safety and Security Program certification. In addition, the TTP includes on-line and classroom trainings on safety management systems, and participation in RTA training of their own employees.

RAILROAD CROSSINGS AND ENGINEERING BRANCH

The mission of Rail Crossings and Engineering Branch (RCEB) is to improve the safety of the public and rail employees by evaluating and recommending appropriate safety measures at highway and pedestrian-rail crossings.

HIRING (BCP TENTATIVE)

In 2017, RCEB acquired a new Utilities Engineer (UE) to work in the San Francisco Office to fill a vacant position. In 2018, RCEB acquired a new UE to work in Southern California to fill a vacant position in the Los Angeles Office.

In 2017, the Safety Enforcement Division (SED) submitted a Budget Change Proposal (BCP). The BCP focused on restructuring the Safety and Enforcement Division (SED) into regional sections to provide staff the opportunity to focus on issues related to the areas in which they work. The Department of Finance approved the following positions that RCEB requested to be hired in fiscal year 2018-19:

2 UEs - Statewide

1 Senior Utilities Engineer (Supervisor) – Sacramento

2 Senior Utilities Engineers (Specialist) for preemption – Statewide

1 PURA III – Statewide

The CPUC also approved RCEB to upgrade a vacant Transportation Analyst position to a PURA III position. In 2018, RCEB will fill the vacant position.

RAIL CROSSING APPLICATIONS

RCEB receives, reviews, and processes approximately 20 formal applications a year. Normally, local highway agencies submit these applications to the CPUC for approval to construct new at-grade or grade-separated highway and pedestrian-rail crossings. In 2017, RCEB staff received notice of 27 new highway and pedestrian-rail crossings formal applications. RCEB staff reviewed the completeness of these applications before local agencies filed them for CPUC approval. RCEB staff also continued the processing of nine applications from 2016 by drafting proposed Decisions for CPUC approval. In 2017, RCEB closed eight proceedings and filed protests against five of the formal applications.

In 2016, the Governor signed into effect Senate Bill (SB) 215. In part, SB 215 requires that all formal applications submitted to the CPUC after January 1, 2017, must be assigned to an Administrative Law Judge and Commissioner. As a result, RCEB no longer is responsible for preparing the draft decisions for each rail crossing related application. RCEB still reviews the applications for completeness before local agencies file them for CPUC approval, and as such becomes a party to each submitted rail crossing application. The new process does not impact the judgement of RCEB and its ability to protest applications.

Park Boulevard

The City of San Diego (City) filed Application A.14-12-003 in December 2014 requesting authorization of design plans for the proposed Park Boulevard railroad crossing adjacent to the downtown Petco Baseball Stadium. The CPUC approved the design plans in 2015. The City of San Diego and San Diego Padres subsequently submitted filings requesting further design changes. RCEB identified safety concerns regarding some of the new proposed design changes. The assigned Administrative Law Judge (ALJ) directed the parties to meet and confer to collaborate on the underlying safety concerns and potential solutions. During 2016, the parties met and conferred.

In early 2017, RCEB filed comments stating agreement with the general concept that resulted from 2016 discussions, but raised concerns that the City did not provide plans showing the actual proposed changes. As a result, the ALJ issued a Proposed Decision, which would authorize the crossing, subject to a further filing of the final design plans. RCEB will participate in the proceeding and review the proposed design changes. RCEB anticipates the City will submit its final design plans to the CPUC by June 2018.

San Diego Station Pedestrian Crossings

In January 2017, the San Diego Association of Governments (SANDAG) submitted five Applications (A.17-01-005, A.17-01-006, A.17-01-007, A.17-01-008 and A.17-01-009) to construct multiple grade-separated rail crossings and transit stations as part of the Mid-Coast Light Rail Transit Extension project on the San Diego Trolley system. RCEB filed protests against four of the Applications due to potential safety concerns regarding at-grade pedestrian crossings within nine of the proposed stations.

During 2017, RCEB met with SANDAG on several occasions and worked out an agreement whereby SANDAG agreed to implement some of RCEB's recommendations to improve safety at the proposed pedestrian crossings. However, the CPUC still needs to resolve the critical issue related to its jurisdiction of pedestrian crossings in transit stations. In 2018, RCEB will continue to work with SANDAG in defining the design details for pedestrian crossings in the transit stations. RCEB anticipates that the Commission will issue a Decision on the matter in 2018, which could possibly address the issue of the Commission's jurisdiction regarding pedestrian crossings within transit stations.

BNSF Railway Application (A.17-03-005)

In 2017, BNSF Railway filed Application A.17-03-005 to request CPUC approval to construct a third track at the existing Rosecrans / Marquardt crossing in the city of Santa Fe Springs. RCEB protested A.17-03-005 because the addition of a third track at the crossing will increase the potential for vehicular and pedestrian rail related accidents at the crossing. The Federal Railroad Administration (FRA) ranks the crossing as one of the most unsafe crossings in the country. In 2018, hearings will commence. RCEB anticipates that the proceeding will be completed in 2018.

Union Pacific Railroad Company Application (A.17-10-009)

In 2017, the Union Pacific Railroad Company (UPRR) filed Application A.17-10-009 to request CPUC approval to alter, close, or relocate the existing Highway-rail 32A crossing in Yolo County. Due to the curvature of the roadway at the crossing, there have been several accidents at the crossing over the years. In addition, UPRR claims that there also have been several non-train related accidents at the crossing due to motorists not being able to negotiate the curvature of the roadway there. RCEB supports the application and is a party to the proceeding. In 2018, RCEB will work with stakeholders to alter, close, or to find an alternative for people to access the surrounding area near the crossing.

California High Speed Rail Applications

In 2016, the California High Speed Rail Authority (CHSRA) commenced filing applications with the Commission for its approval to construct or modify grade-separated crossings for the high-speed rail corridor. RCEB has been working with CHSRA in regards to the specific engineering and safety features for each proposed crossing. In 2018, RCEB anticipates that CHSRA will continue to file formal and GO88-B applications with the Commission for the construction or modification for about 50 crossings on the high-speed rail corridor.

GENERAL ORDER 88-B APPLICATIONS

CPUC has given RCEB the authority to approve alteration applications of existing public highway-rail crossings through its General Order (GO) 88-B process. In 2017, RCEB received 95 GO 88-B applications to modify existing crossings. RCEB approved 102 GO 88-B applications, some of which were submitted in 2016. In 2018, RCEB anticipates that it will receive process and approve approximately 100 GO 88-B applications.

ACCIDENTS

RCEB investigates crossing related accidents to determine their root cause and provide recommendations that the railroads or local roadway authorities may implement to enhance safety and prevent similar accidents from recurring at the crossings. In 2017, RCEB received notice of 193 accidents and closed 192 accident reviews, including accidents from 2016. RCEB determined that 22 of the accidents were suicides and that 146 of the accidents occurred at grade crossings.

SECTION 130 PROGRAM

The CPUC and the California Department of Transportation (Caltrans) jointly administer the railroad-highway grade crossing improvement program, more commonly known as the Section 130 Program. California receives about \$16 million from the federal government each year to improve crossings. At the CPUC, RCEB identifies project locations, determines eligibility for funding and respective ranking of Section 130 project crossings; conducts diagnostic meetings, develops the scope of work and submits projects for funding to Caltrans. Caltrans administers the federal funding and contracts with local agencies and railroads to implement the project scopes of work. After projects are contracted, CPUC and Caltrans jointly coordinate on project implementation with the involved agencies.

In 2017, RCEB developed and delivered 21 new project packages to Caltrans for funding of crossing safety improvements worth \$37.8 million. In 2018, RCEB plans to complete and deliver project packages to Caltrans, which began development in 2017, with a goal of submitting approximately \$40 million in new projects to Caltrans for funding. RCEB will continue identifying new projects for funding.

SECTION 190 PROGRAM

Caltrans and CPUC administer the Section 190 Program. The Section 190 Program allocates \$15 million in annual state funding to assist local agencies in developing projects to grade separate rail crossings. The process involves a formal CPUC proceeding wherein local agencies nominate projects to receive funding and the CPUC ranks the projects. RCEB represents the CPUC in the ranking process. After RCEB ranks the projects in priority order, local agencies may request Section 190 funds from the State via Caltrans. For fiscal years 2016 and 2017, the CPUC

received and ranked 38 nominations. In 2018, RCEB will begin a new proceeding to generate a new priority list for fiscal years 2018-2019 and 2019-2020.

The State needs to increase funding for the Section 190 Program. In comparison with the \$15 million allocation, the current cost to construct a single grade-separated crossing is about \$50 million. In 2018, RCEB will work with Caltrans to seek legislation to increase funding for the Section 190 Program. RCEB will request that the funding be increased from \$15 million to \$75 million annually.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

California has a statutory requirement that planning of future developments is subject to public review under The California Environmental Quality Act (CEQA). As such, RCEB reviews environmental impact reports (EIR) to identify impacts to rail crossings and corridors during planning stages. In cases where the proposed projects impact highway-rail crossings safety, RCEB will notify its concerns to the lead agency. The process of reviewing the EIRs has produced positive results; agencies that have projects that may affect the safety of highway-rail crossings have implemented measures to enhance the safety of those crossings. In 2017, RCEB reviewed approximately 270 EIRs and issued six crossing safety impact notifications. RCEB will continue to review EIRs in 2018.

NATIONAL COMMITTEE ON UNIFORM TRAFFIC CONTROL DEVICES

RCEB has developed a strong relationship with the Federal Highway Administration (FHWA) through its joint administration with Caltrans of the Section 130 program, as well as participation in the National Committee on Uniform Traffic Control Devices (NCUTCD) highway-rail committee. Two RCEB staff members are voting members of the NCUTCD. RCEB participates by attending the meetings and analyzing proposed changes, offering comments, identifying unintended consequences, proposing further changes, participating in committee exchanges on technical matters and ultimately voting on proposed changes. The participation is mutually beneficial to both FHWA and the State of California. RCEB will attend two NCUTCD meetings in 2018.

HIGHWAY-RAIL CROSSINGS ACTION PLAN

The Rail Safety Improvement Act of 2008 required the FRA to identify ten States with the most grade crossing collisions in the prior three years, and to require those States to develop a State Action Plan (SAP), covering a five-year period, and to develop specific solutions for improving safety at rail crossings. California was identified as one of the ten states. As a result, RCEB prepared and implemented the CPUC's SAP for the years 2012-2017.

On December 4, 2015, the President of the United States signed the Fixing America's Surface Transportation (FAST) Act. The FAST Act requires the FRA to establish a rule that requires each state identified in the Rail Safety Improvement Act of 2008 to:

- I. Update its existing SAP
- II. Submit the updated SAP to the FRA Administrator with a Report describing what the State did to implement its previous SAP and how the State will continue to reduce highway-rail grade crossing safety risks

RCEB is evaluating the CPUC's SAP (2012-2017) to determine the progress it made in implementing the plan. In 2018, RCEB plans to prepare a report for the FRA identifying its accomplishments in implementing the CPUC's SAP (2012-2017). RCEB will also start preparing a new CPUC SAP that RCEB anticipates will be due to the FRA in 2019.

RAILROAD SIGNAL PREEMPTION

On October 1, 2010, as the result of National Transportation Safety Board's recommendations regarding preempted highway-rail crossings, the FRA issued Safety Advisory SA-2010-02, which states in part "... that States, local highway authorities, and railroads conduct comprehensive periodic joint inspections of highway traffic signal preemption interconnections and use information obtained from any railroad and highway traffic signal recording devices during those inspections." In response, RCEB is developing a statewide railroad preemption program in which it will recommend that local highway authorities conduct joint inspections with the railroad companies of all their highway traffic signal preemption interconnections and correct all deficiencies.

In 2017, RCEB developed guidelines for state and local agencies to refer to when designing and implementing railroad preemption systems. RCEB met with Caltrans to discuss the preemption guidelines. Caltrans staff generally agreed with RCEB; however, Caltrans requested more time to work on some of the design elements regarding the guidelines. After RCEB finalizes its preemption guidelines, it will post the guidelines on the CPUC website for the local highway authorities to review and use when considering preemption.

In 2018, RCEB plans to hire two full-time Senior Utilities Engineers (Specialist) to work with staff, state and local agencies to address the design and implementation of preemption systems in California. The Specialists will lead a preemption inspection program to help local agencies and railroads schedule and review preemption settings on site.

EMERGENCY NOTIFICATION SYSTEM

All railroads were required to post Emergency Notification System (ENS) signs at all their at-grade crossings by September 1, 2015. RCEB is investigating which railroads, including rail transit systems, are responsible for the ENS signs at crossings in shared rail corridors. Once RCEB determines the responsible railroads, the data will be included in the RSSIMS database.

In 2017, RCEB met with UPRR and BNSF to discuss the lists and resolve which railroad was responsible for the ENS signs on their shared corridor crossings. Due to personnel changes at

both UPRR and BNSF, the railroads were not able to completely verify the shared corridor lists of crossings.

In 2018, RCEB will continue to work with the railroads to identify the shared corridor crossings they are responsible for installing and maintaining the ENS signs. Once the lists are completed and verified, RCEB will send similar lists to the transit agencies to ensure that all the shared corridor crossings have ENS signs. RCEB will enter the ENS information into the RISSIMS database.

CALIFORNIA OPERATION LIFESAVER EDUCATION AND ENFORCEMENT

Operation Lifesaver Inc. (OLI) is a non-profit organization dedicated to promoting rail safety education in an effort at reducing and eliminating accidents and incidents at highway railroad grade crossings and railroad right-of-ways. RCEB, along with railroad employees and other knowledgeable railroad safety professionals, contribute significantly to the educational efforts in this regard, resulting in more knowledgeable California motorists and citizens. RCEB has staff members that are qualified as OLI presenters.

RCEB, in coordination with railroad personnel and the OLI State Coordinators, identify areas of greatest need based on accidents and other data (for example, near-miss data shared by railroads). OLI then targets civic groups, schools, bus and truck drivers, and law enforcement officers in those areas for the OLI presentations. This outreach also assists in development of the Officer-on-the-Train programs, which coordinate rail crossing law enforcement sweeps along target rail corridors, often involving multiple law enforcement agencies.

To track their participation in the OLI outreach effort, RCEB submits information to OLI, reporting information such as the date, time, location, organization contact information, number of people attending, and the type of group receiving the message. RCEB also has qualified presenters that can do the presentation in Spanish. In 2018, RCEB will continue working with OLI and provide safety presentations.

SPECIAL PROJECTS

General Order 145

Commission General Order (GO) 145 explains the process in which vehicles may become exempt from the mandatory stop requirement at crossings of Section 22454 of the Vehicle Code. It also provides the criteria that must exist at a particular crossing in order for the crossing to be considered exempt. GO 145, Section 4.5 requires that the CPUC publish a list of exempt crossings and update the list annually. The list shall be provided to each railroad corporation, passenger and stage corporation, and some petroleum carriers. It appears that the last time the CPUC published the list was in 1977.

In 2017, RCEB only had a hardcopy of the 1977 list which contained 1,460 crossings that at one time were classified as exempt. RCEB narrowed down the list to about 800 crossings that it

needed to verify. In 2017, RCEB checked about 550 of the crossings. Of those staff verified, 30 crossings remained exempt with the majority closed. RCEB still needs to verify about 250 crossings. In 2018, RCEB will complete its verifications and share with the local highway authorities the results of its exempt crossing review. If a local highway authority believes that RCEB's evaluations are in error, RCEB will review those crossings on a case-by-case basis. After the interested parties review and agree with RCEB's findings, RCEB will update the RSSIMS database with the current information, post the list on the CPUC's website, and update it accordingly.

Crossing Maintenance Program

California established the Grade Crossing Protection Maintenance Fund to pay to the railroads the local roadway authority's (city or county) share of the cost of maintaining automatic warning devices at highway-rail crossings installed or upgraded after October 1, 1965. CPUC verifies the claims and forwards them to Caltrans for payment. RCEB will start processing and evaluating new claims in March 2018 for the following fiscal year. In 2018, RCEB will conduct a full analysis of all the highway-rail crossings in California that are funded to ensure that the crossings are eligible to receive the maintenance funding.

Autonomous Vehicles

Major car manufacturers are proposing to make autonomous vehicles available to the public within the next five years. The CPUC needs to review how passive and active equipment at highway rail and transit crossings will need to be changed to accommodate these vehicles. This may require the hiring of additional staff. The FHWA is already beginning to study this matter which may eventually lead to new regulations. RCEB plans to work with the FHWA and other agencies in addressing the safety issues. RCEB believes that the use of such vehicles will transform how grade crossings are designed and constructed in the future.

CONTRACTS

Section 130 Program Contracts

Title 23 United States Code, Section 130 requires each state to report to the Federal Department of Transportation (DOT) current information, including information about warning devices and signage, concerning each public crossing located within borders. Each state must report this information to the DOT on a routine basis. RCEB uses funding from the Federal Section 130 Program to help meet some of these Federal mandates.

STOP / YIELD Signs

The California Manual of Uniform Traffic Control Devices, Section 8B.04 requires that STOP and YIELD signs be installed passive crossings (crossings without active warning devices). The CPUC is the lead agency for coordinating the installation of STOP and YIELD signs at passive crossings

in California as noted in the California Manual on Uniform Traffic Control Devices. The determination of whether to install a STOP or a YIELD sign is a safety critical decision dependent upon a number of specific factors. Passive crossings are those in which there are no active warning devices such as gates and signals. In September 2016, the CPUC hired a contractor to work on the first phase of the project, which involves inventory review, database update and cleanup, and a sightline analysis for the passive crossings.

The first phase is approximately 80% complete and should be completed in mid-2018. In 2018, RCEB will then select another contractor to assist in analyzing the results of the first phase. RCEB will then notify each road authority (City, County, and/or Caltrans), and Railroads affected by the project of its findings and recommendations. RCEB must complete everything by May 15, 2019 when the contract and funding expires.

Crossings Inventory

California has approximately 12,500 public and private rail and rail transit crossings. RCEB collects and maintains rail crossing inventory data for the state, which is entered into RSSIMS. The Section 130 Program allows for a percentage of the funds to be utilized in related database and inventory improvements. RCEB selected a contractor to conduct field inventory of 1,556 active crossing locations in 2016. RCEB staff will conduct a variety of oversight tasks. Phase I of the project was completed in August 2017.

There are approximately four thousand active crossings left to inventory. The existing funding is not sufficient to complete all of the remaining crossings in Phase Two. RCEB plans to separate the project into four phases depending on actual costs and available budget over the next five years. In 2018, RCEB will select a consultant for the next phase of the project.

Preliminary Engineering Services

The preliminary engineering contract is a new effort, which RCEB identified as a critical in order to develop sufficient projects for funding within the Section 130 Program time requirements. The Section 130 program directly funds actual construction. However, before these projects can commence, the affected agency must perform a preliminary engineering analysis, which frequently involves investigating right-of-way, utility conflicts, and geometric design constraints. Currently, RCEB negotiates with these agencies to use their resources to perform the analyses. This has been one of the most significant hurdles in developing projects as many agencies are on constrained budgets and do not have funding readily available.

RCEB and Caltrans have worked for the last ten years on ways to fund the preliminary engineering. FHWA does not allow CPUC or Caltrans to give funds directly to local or railroad agencies for preliminary engineering under the Section 130 Program. However, Caltrans has determined that RCEB is able use up to 10% of Section 130 funding to facilitate this endeavor. FHWA has approved funding the project. CPUC will now select a contractor to conduct the preliminary engineering analysis for some crossing improvement projects. As this is a new effort, RCEB is finding that it is taking longer to go through the RFP development and bid process for this project than other projects in which RCEB is involved.